Bonneville Power Administration (Bonneville, BPA)
Proposed Appropriations Language

Expenditures from the Bonneville Power Administration Fund, established pursuant to Public Law 93-454, are approved for [the Black Canyon Trout Hatchery] *the Shoshone Pauite Trout Hatchery, the Spokane Tribal Hatchery, the Snake River Sockeye Weirs* and, in addition, for official reception and representation expenses in an amount not to exceed $5,000: Provided, that during fiscal year [2015] *2016*, no new direct loan obligations may be made.

Explanation of Changes

The proposed appropriations language restricts new direct loans in FY 2016 as in FY 2015. This bill language is drafted consistent with the Credit Reform Act of 1990.

Please Note - The FY 2016 Bonneville Power Administration Congressional Budget submission includes FY 2015 budget estimates.

Bonneville finances its operations with a business-type budget under the Government Corporation Control Act, 31 U.S.C 9101-10, on the basis of the self-financing authority provided by the Federal Columbia River Transmission System Act of 1974 (Transmission Act) (Public Law 93-454) and the U.S. Treasury borrowing authority provided by the Transmission Act, the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Pacific Northwest Power Act) (Public Law 96-501) for energy conservation, renewable energy resources, investment in capital fish facilities, and other purposes, the American Recovery and Reinvestment Act of 2009 (Public Law 111-5), and other legislation. Authority to borrow from the U.S. Treasury is available to Bonneville on a permanent, indefinite basis. The amount of U.S. Treasury borrowing outstanding at any time cannot exceed $7.70 billion.[1] Bonneville finances its approximate $4.3 billion annual cost of operations and investments primarily using power and transmission revenues, and borrowing from the U.S. Treasury at rates comparable to borrowings at open market rates for similar issues.

This budget has been prepared in accordance with the Statutory Pay-As-You-Go Act (PAYGO) of 2010. Under PAYGO, all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

[1] Amount of total bonds outstanding can be found in tables BP-4A – 4D in the Additional Tables section.

Bonneville Power Administration

Funding Profile by Subprogram [1/]

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2014 Actuals	2015 Original [2/]	2015 Revised [2/]	2016 Proposed
Capital Investment Obligations				
Associated Project Costs [3/]	58,187	N/A	211,829	240,790
Fish & Wildlife	37,353	N/A	51,807	54,807
Conservation & Energy Efficiency [3/]	77,887	N/A	92,000	94,800
Subtotal, Power Services	173,427	N/A	355,637	390,398
Transmission Services	340,825		704,254	621,816
Capital Equipment & Bond Premium	30,204	N/A	34,669	39,356
Total, Capital Obligations [3/]	544,456	1,055,079	1,094,559	1,051,569
Expensed and Other Obligations				
Expensed	3,262,726	2,996,419	2,911,588	3,040,716
Projects Funded in Advance	384,689	46,491	30,000	30,000
Total, Obligations	4,191,871	4,097,988	4,036,147	4,122,285
Capital Transfers (cash)	567,000	209,270	209,270	206,900
BPA Total	4,758,871	4,307,258	4,245,417	4,329,185
Bonneville Net Outlays	262,365		156,739	56,365
Full-time Equivalents (FTEs)	2,893	3,200	3,100	3,100

Public Law Authorizations include:

Bonneville Project Act of 1937, Public Law No. 75-329

Federal Columbia River Transmission System Act of 1974, Public Law No. 93-454

Regional Preference Act of 1964, Public Law No. 88-552

Flood Control Act of 1944, Public Law No. 78-543

Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), Public Law No. 96-501

Outyear Funding Profile by Subprogram [1/]

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2017	2018	2019	2020
Capital Investment Obligations				
Associated Project Costs [3/]	269,908	281,266	313,981	334,067
Fish & Wildlife	30,795	18,646	34,806	35,033
Conservation & Energy Efficiency [3/]	97,600	100,500	103,600	106,700
Subtotal, Power Services	398,303	400,412	452,387	475,800
Transmission Services	544,479	445,678	444,746	416,256
Capital Equipment & Bond Premium	30,794	12,896	8,477	6,141
Total, Capital Obligations [3/]	973,576	858,986	905,609	898,197
Expensed and Other Obligations				
Expensed	3,160,449	3,223,081	3,107,629	3,180,861
Projects Funded in Advance	30,000	30,000	50,000	50,000
Total, Obligations	4,164,025	4,112,067	4,063,239	4,129,058
Capital Transfers (cash)	221,279	264,151	558,916	502,938
BPA Total	4,385,304	4,376,218	4,622,154	4,631,996
Bonneville Net Outlays	50,266	(1,734)	(50,734)	(25,871)
Full-time Equivalents (FTEs)	3,100	3,100	3,100	3,100

These notes are an integral part of this table.

1/ This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

2/ Original estimates reflect Bonneville's FY 2015 Congressional Budget Submission. Revised estimates, consistent with Bonneville's annual near-term funding review process, provide notification to the Administration and Congress of updated capital and expense funding levels for FY 2015.

3/ Includes infrastructure investments designed to address the long-term electric power related needs of the Northwest and to reflect significant changes affecting Bonneville's power and transmission markets.

Additional Notes

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Cumulative advance amortization payments as of the end of FY 2014 are $3,060 million.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988, regarding Bonneville's ability to obligate funds.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

FY 2015 Net Outlays are calculated using Bonneville’s revenue forecast from the BP-14 rate case. FYs 2016 & 2017 Net Outlays are calculated using Bonneville’s revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FY 2020 assumes a 1% growth in Offsetting Collections.

FTE outyear data are estimates and may change.

Major Outyear Considerations

Bonneville's outyear estimates reflect its ongoing efforts to achieve its long-term mission and strategic direction. The outyear estimates are developed with consideration and support of Bonneville's multi-year performance targets that lay out the course for achieving Bonneville's long-term objectives. Outyear capital investment levels support Bonneville's infrastructure program, hydro efficiency program, conservation and energy efficiency projects, and its fish and wildlife mitigation projects.

With passage of the Energy Policy Act of 2005, Bonneville continues to incorporate the various aspects of the legislation related to its business, in particular the energy supply, conservation, and new energy technologies for the future that are highlighted in the legislation.

Overview and Accomplishments

Bonneville provides electric power, transmission, and energy efficiency throughout the Pacific Northwest. Bonneville serves a 300,000 square mile area including Oregon, Washington, Idaho, western Montana, and parts of northern California, Nevada, Utah, and Wyoming with a population of about 12.9 million people. Bonneville markets the electric power produced from 31 federal hydro projects in the Pacific Northwest owned by the U.S. Army Corps of Engineers (Corps) and the U.S. Department of Interior, Bureau of Reclamation (Reclamation) – known as Associated Projects. Bonneville also acquires non-federal power, including the power from the nuclear power plant, Columbia Generating Station (CGS), to meet the needs of its customer utilities. Bonneville maintains and operates 15,169 circuit miles of transmission lines, 260 substations, and associated power system control and communications facilities over which this electric power is delivered. Bonneville has capital leases for certain transmission facilities. Bonneville also supports the protection and enhancement of fish and wildlife, and promotes conservation and energy efficiency, as part of its efforts to preserve and balance the economic and environmental benefits of the Federal Columbia River Power System (FCRPS).

The organization of Bonneville's FY 2016 Budget reflects Bonneville's business services basis for utility enterprise activities. Bonneville's two major areas of activity on a consolidated budget and accounting basis include Power Services (PS) and Transmission Services (TS) with administrative costs included. The PS includes line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program (REP), Associated Projects Operations & Maintenance (O&M) Costs, and Northwest Power and Conservation Council (Planning Council or Council).

The mission of Bonneville is to create and deliver the best value for its customers and constituents as it acts in concert with others to assure the Pacific Northwest: (1) an adequate, efficient, economical and reliable power supply; (2) an open access transmission system that is adequate for integrating and transmitting power from federal and non-federal generating units, providing service to Bonneville's customers, providing interregional interconnections, and maintaining electrical reliability and stability; and (3) mitigation of the FCRPS impacts on fish and wildlife. Bonneville is legally obligated to provide cost-based rates and public and regional preference in its marketing of power. Bonneville sets its rates as low as possible consistent with sound business principles and sufficient to ensure the full recovery of all of its costs, including timely repayment of the federal investment in the system. Bonneville's vision is to provide: (1) high reliability; (2) low rates consistent with sound business principles; (3) responsible environmental stewardship; and (4) accountability to the region. Bonneville pursues this vision consistent with its four core values of trustworthy stewardship of the FCRPS, collaborative relationships, operational excellence, and safety.

Alignment to Strategic Plan and President's Climate Action Plan

Bonneville contributes to the Administration's clean energy goals and aligns to Goal 1 of the Department of Energy's (DOE) Strategic Plan to *Advance foundational science, innovate energy technologies, and inform data driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of and enhance resilience against climate change*. Bonneville is currently working to modernize the electric grid in the Northwest through initiatives such as the Smart Grid Demonstration Project, 15-minute Transmission Scheduling and the Syncrophaser Program as well as making significant capital investments in new transmission lines to help integrate wind power and other resources into the power system.

In addition, as part of its responsibilities, Bonneville promotes energy efficiency, renewable resources, and new technologies.

Bonneville also aligns to Goal 3 of the DOE Strategic Plan to *Position the DOE to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue departmental missions*. Bonneville contributes through Cybersecurity, Sustainability, Talent Management, and Safety Policy initiatives.

To validate and verify program performance, Bonneville conducts various internal and external reviews and audits. Bonneville conducts extensive review within the region of both capital and expense programs. In addition, Bonneville's programmatic activities are subject to review by Congress, the U.S. Government Accountability Office (GAO), the DOE's Inspector General, and other governmental entities. Bonneville's financial statements are audited annually by an independent external auditor. Bonneville has received an unqualified audit opinion since the mid-1980s and no material weaknesses have been identified in controls over financial reporting.

Legislative History

The Bonneville Project Act of 1937 provides the statutory foundation for Bonneville's utility responsibilities and authorities. In 1974, passage of the Federal Columbia River Transmission System Act (Transmission Act) applied provisions of the Government Corporation Control Act (31 U.S.C. §§ 9101-9110) to Bonneville. The Transmission Act provides Bonneville with "self-financing" authority, establishes the Bonneville Fund (a permanent, indefinite appropriation) allowing Bonneville to use its revenues from electric power and transmission ratepayers to fund all programs without further appropriation, and authorizes Bonneville to sell bonds to the U.S. Treasury to finance the region's high-voltage electric transmission system requirements.

In 1980, enactment of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) expanded Bonneville's authorities, obligations and responsibilities to encourage: electric energy conservation to meet regional electric power loads placed on Bonneville; develop renewable energy resources within the Pacific Northwest; assure the Northwest an adequate, efficient, economical, and reliable power supply; promote regional participation and planning; and protect, mitigate and enhance the fish and wildlife of the Columbia River and its tributaries. The Northwest Power Act also established the statutory framework for Bonneville's administrative rate-setting process and established judicial review of Bonneville's final decisions in the U.S. Court of Appeals for the Ninth Circuit.

As of 2014, Congress has provided Bonneville with revolving U.S. Treasury borrowing authority of $7.7 billion.

The Columbia River Treaty

On December 13, 2013, the U.S. Entity, which includes Bonneville and the Corps, delivered a regional recommendation concerning the post-2024 future of the Columbia River Treaty to the National Security Council and the U.S. Department of State.

Judicial and Regulatory Activity

The Energy Policy Act of 2005 authorized the Federal Energy Regulatory Commission (FERC) to approve and enforce mandatory electric reliability standards with which users, owners, and operators of the bulk power system, including Bonneville, are required to comply. These standards became enforceable on June 18, 2007, and compliance is monitored by the North American Electric Regulatory Corporation (NERC) and the regional reliability organizations. DOE and the Department of Justice took the position that financial penalties may not be imposed on federal agencies for violations of electric reliability standards. On August 22, 2014, the U.S. Court of Appeals for the District of Columbia Circuit concurred with this in a case when it upheld the position that federal agencies have sovereign immunity with regard to financial penalties.

Fish and Wildlife Program Overview

Bonneville is committed to continue funding its share of the region's efforts to protect and mitigate Columbia River Basin fish and wildlife. To the extent possible, Bonneville is integrating the actions implemented to protect listed species in response to the FCRPS Biological Opinions (BiOps), including the National Oceanic and Atmospheric Administration (NOAA) Willamette River BiOp and the United States Fish and Wildlife Service's (USFWS) 2006 Libby Dam BiOp, with projects implemented under the Council's Fish and Wildlife Program (Council's Program). The sub-basin plans developed as part of the Council's Program and long-term agreements that include prioritized strategies for mitigation actions will help guide project selection to meet both Bonneville's Endangered Species Act (ESA) and Northwest Power Act responsibilities.

Included with the budget schedules section of this document is the current tabulation of Bonneville's fish and wildlife costs from FY 2005 through FY 2014.

Infrastructure Investment

Bonneville is moving forward with infrastructure investments in the Pacific Northwest to meet transmission needs that will also continue to support a competitive wholesale market in the Western Interconnection, which encompasses 14 western states, two Canadian provinces, and one Mexican state. The McNary-John Day line – completed in FY 2012, under budget and ahead of schedule – added 79 miles, and three additional transmission lines would add more than 140 miles of lines to the Northwest transmission grid, improving reliability. In combination with other transmission projects, these projects would allow Bonneville to provide service to about 3,881 megawatts (MWs) of requests for Bonneville transmission, including service for 3,138 MWs of additional renewable resource generation. The proposed transmission lines include Bonneville's I-5 Corridor Reinforcement Project, which is currently undergoing environmental review. The Big Eddy-Knight

500kV transmission line and substation project resumed construction in 2014. In addition, Central Ferry-Lower Monumental 500kV Reinforcement began construction in May 2014. If all three projects are constructed along with the McNary-John Day line they will provide almost 6,000 MW of new transmission service. In addition, Bonneville is continuing to target transmission investments in those areas with reliability needs.

In FY 2012, Bonneville signed two agreements through which the agency agreed to participate with two investor-owned utilities in the environmental work and permitting for the proposed Boardman-to-Hemingway 500kV line. Participation in this preliminary review keeps Bonneville's options open for serving its six southeast Idaho preference customers after the current service agreements are terminated. Bonneville has not made a decision to co-develop or purchase capacity in these projects. On January 17, 2014, Public Law 113-76 was enacted into law and it provided Bonneville with requested expenditure authority approval to proceed with either one of these options.

These efforts will help meet the increasing demand for Bonneville's service to meet regional greenhouse gas reduction and environmental goals of western states. In support of these goals and as part of the Regional Dialogue policy implementation, Bonneville is working with stakeholders to review its role in the development and use of energy efficiency.

Bonneville has experienced significant growth within its balancing area of installed variable renewable generation, primarily in the form of wind generation. Since 2001, installed wind generation has grown from 115 MWs to 5,085 MWs through December 2014. Bonneville estimates an additional 20 MWs of wind generation could be in place in 2015. This substantial increase in variable renewable generation has resulted in additional uncertainties in the balance between load and generation required for maintaining a reliable grid. Wind also is a non-dispatchable source of energy, meaning it cannot be relied upon for capacity. As a result, Bonneville has implemented and continues to study operational tools for integrating this variable generation more cost effectively and reliably. In addition, Bonneville studied the feasibility of further developing storage technologies, including pump storage capabilities at the John W. Keys III Pump Generating Plant. There currently are no plans for further development and Bonneville is continuing to support maintaining the current facility.

Bonneville considers approaches in addition to the use of U.S. Treasury borrowing authority to sustain funding for its infrastructure investment requirements as well. These approaches include reserve financing of some amount of transmission investments, and seeking, when feasible, third party financing sources. See the BP-5 Potential Third Party Financing Transparency table in the budget schedules section of this document. This FY 2016 Budget assumes $15 million of annual reserve financing in FYs 2015-2020 for transmission infrastructure capital, which is included in this budget under Projects Funded In Advance.

Radio Spectrum Communications

Bonneville's wireless communication system is used to operate and control critical national transmission grid infrastructure in a reliable, secure, and safe manner. Bonneville's communication systems are designed to meet strict reliability/availability objectives required by NERC and Western Electricity Coordinating Council (WECC) standards. Concerning proper spectrum stewardship, Bonneville designs highly efficient radio systems that use minimal radio frequency (RF) channel bandwidths to meet critical mission needs. However, in certain circumstances, efficiently designed spectrum radio systems will require broad RF channels and/or lower state RF modulation schemes to meet existing and future requirements in order to meet operational and reliability/availability objectives.

In order to meet Bonneville's mission/operational requirements, RF communication equipment approved for system use goes through a rigorous evaluation and testing process. RF spectrum efficiency factors are considered during the evaluation/testing period. RF terminal equipment approved for use is normally purchased directly from vendors and is not typically supplied through an RFP process.

Bonneville's operational telecommunications and other capital equipment and systems are acquired using Bonneville's self-financing and procurement authorities. The Bonneville budget includes a system-wide electric reliability performance indicator, consistent with NERC rules, to track and evaluate performance.

Bonneville may share temporarily-available spare capacity on its RF communication system with other government agencies (both Federal and State), and with other electric utilities in the region whose power systems interconnect with Bonneville. Non-critical administrative traffic is typically supported by commercial carrier enterprises. However, to meet NERC/WECC electrical bulk transmission requirements, Bonneville exclusively operates highly critical transmission control

traffic over its private telecommunication system as Bonneville has no control over the reliability/availability of the commercial enterprise or on how quickly critical operational control circuits are restored to active service during an interruption.

For high capacity communication system applications, Bonneville considers and operates non-spectrum dependent alternatives such as fiber optic cable infrastructure systems.

During FY 2014, Bonneville began upgrading the VHF land mobile system and to install a number of digital SONET rings typically consisting of fiber segments in combination with point-to-point microwave hops operating in the 4 GHz and 7/8 GHz bands. These various telecommunication systems operate within Bonneville's approximate 300,000 square mile utility responsibility service territory (Oregon, Washington, Idaho, Montana) with the majority of the RF infrastructure located in low population-rural areas.

The hydro power plants, primarily owned by the Corps and Reclamation, also utilize federal radio spectrum to preserve very high operational telecommunications and power system reliability.

In FY 2015, Bonneville expects to return to the U.S. Treasury, via the Spectrum Relocation Fund, approximately $8.2 million of excess funds remaining following completion of work costing approximately $40 million to relocate its operational telecommunication systems from the 1710-55 MHz radio spectrum bands to alternative federal radio spectrum bands. Bonneville also is participating with other federal agencies in the planned relocation from federal radio systems from the 1755-80MHz radio spectrum bands. The National Telecommunications Information Administration (NTIA) of the U.S. Commerce Department has approved and, in July 2014, web-posted federal agency relocation plans, including the Bonneville relocation plan. The Federal Communications Commission (FCC) held an auction of this spectrum on November 13, 2014. Bonneville is expected to receive an additional $5.2 million from the Spectrum Relocation Fund in FY 2015 to fully pay for this new relocation effort, including, as in the prior relocation, the purchase and installation of new digital r adio equipment.

Financial Mechanisms

Bonneville's program is treated as mandatory and nondiscretionary. Bonneville is "self-financed" with its own revenues and does not rely on annual appropriations from Congress. Under the Transmission Act, Bonneville funds the expense portion of its budget and repays the federal investment with revenues from electric power and transmission sales. Bonneville's revenues fluctuate primarily in response to variations in market prices for fuels and water stream flow in the Columbia River System due to weather conditions and fish mitigation needs. Through FY 2014, Bonneville has returned approximately $29.8 billion to the U.S. Treasury, of which about $3.4 billion was for payment of FCRPS O&M and other costs, $14.8 billion for interest, and $11.7 billion for amortization of appropriations and bonds.

In this FY 2016 Budget, the term Bonneville "bonds" refers to the debt instruments under which Bonneville receives advances of funds from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act (P.L. 93-454), which defines Bonneville bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

In August 2014, the three major credit rating agencies affirmed the ratings on Bonneville-backed debt.

Bonneville and the U.S. Treasury have a comprehensive banking arrangement that covers Bonneville's short- and long-term federal borrowings and establishes a phased-in approach to a market-based investing program. This provides Bonneville with the ability to borrow to finance assets and, on a short-term basis, to cover Northwest Power Act-related operating expenses. This latter ability provides Bonneville with much needed liquidity to help manage within-year cash flow needs and mitigate risk. Access to this use of U.S. Treasury borrowing authority has been incorporated into and relied upon in Bonneville's rate-setting process.

Bonneville initiated a Power Prepayment Program in FY 2013 under which all Bonneville preference customers had an opportunity to submit formal offers to provide lump-sum payments to Bonneville as prepayments of a portion of their power purchases through September 30, 2028, the termination date of the Long-Term Regional Dialogue Power Sales Contracts. Bonneville accepted power prepayments from four preference customers, as described below.

Upon Bonneville's receipt of the agreed-to, lump-sum prepayments, the selected preference customers became entitled to future portions of their electricity from Bonneville without further payment. The power prepayments are and will be recognized in the customers' future power bills from Bonneville as fixed, equal monthly prepayment credits. In effect, the amount of electricity that is prepaid may vary by month, depending on Bonneville's power rates and rate schedules that apply to electricity purchases by the prepaying customers in the related month. Because this is structured as a variable amount prepayment and not as a fixed-price/fixed-amount type of prepayment, Bonneville's maintains flexibility to establish rates for the electric power that is prepaid.

As a result of the Fiscal Year 2013 Prepayment solicitation, Bonneville received $340 million in prepayments, which Bonneville will use to fund needed FCRPS hydroelectric investments. The aggregate prepayment credits are set at $2.55 million per month through FY 2028.

Depending on a variety of factors it is possible that Bonneville may seek to implement later phases of the Power Prepayment Program in connection with future FCRPS hydroelectric investment needs.

Treasury Payments and Budget Overview

Bonneville made its full planned FY 2014 payment of $991 million to the U.S. Treasury (which included advanced repayment of $321 million). Total 4(h)(10)(C) credits associated with fish mitigation and recovery and applied toward Bonnevill e's Treasury payment, were about $104 million for FY 2014. For FY 2015, Bonneville plans to pay the U.S. Treasury $713 million: $209 million to repay investment principal, $414 million for interest, and $90 million for Associated Project costs and pension and post-retirement benefits. The FYs 2016 and 2017 Treasury payments are currently estimated at $710 million and $741 million, respectively. The FY 2015 4(h)(10)(C) credit is estimated at $91 million. The FYs 2016-2017 4(h)(10)(C) credits are currently estimated at $96 million and $93 million respectively.

Estimates of interest and amortization levels for outyear U.S. Treasury payments are based on estimates from the 2014 transmission and power rate case proposals, which were transmitted to FERC on July 24, 2013, and FERC issued final approval on April 16, 2014. Bond and Appropriations Interest will continue to be revised based on upcoming capital investments and debt management actions. These estimates may change due to revised capital investment plans and actual U.S. Treasury borrowing. In recent years, Bonneville has made amortization payments in excess of those scheduled in its FERC-approved rate filings resulting in a balance of advance repayment. The cumulative amount of advance amortization payments as of the end of FY 2014 is about $3,060 million.

Bonneville has direct funding arrangements with the Corps and Reclamation to pay the power related portion of O&M and capital investments. Direct funded capital costs, previously funded through appropriations, are now being paid through Bonneville's borrowing from the U.S. Treasury and customer prepayments. Bonneville's total direct funding was $358 million in FY 2014.

This FY 2016 Budget proposes estimated accrued expenditures of $3,041 million for operating expenses, $30 million for Projects Funded in Advance (PFIA), $1,052 million for capital investments, and $207 million for capital transfers in FY 2016.

The estimated spending levels in this budget are still subject to change to accommodate competitive dynamics in the region's energy markets, debt management strategies, and the continued restructuring of the electric industry.

Current Financial Status

Bonneville is striving to enhance its competitive, cost-effective delivery of utility products and services and continued delivery of the public benefits of its operations, while ensuring its ability to make its payments to the U.S. Treasury on time and in full. Bonneville employs a strategic planning process using the balanced scorecard model to align all business units around specific goals and align resources to achieve these goals. Results from these efforts include continued efficiency gains, performance integration improvements, and a high assurance for repayment of U.S. Treasury borrowing.

Continued cost management efforts have helped Bonneville build adequate financial reserve levels to assure full recovery of its costs and long-term financial stability while meeting its overall responsibilities to the Pacific Northwest and U.S. taxpayers.

Bonneville published the initial proposal for the FYs 2016-2017 rates on December 10, 2014.

Budget Estimates and Planning

This FY 2016 Budget includes capital and expense estimates based on initial spending proposals in Bonneville's 2014 Capital Investment Review (CIR) and Integrated Program Review (IPR) processes. FY 2014 costs are based on Bonneville's FY 2014 audited actuals.

Capital funding levels reflect Bonneville's capital asset management process and external factors such as the significant changes affecting the West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region and national energy security goals.

Capital investment levels in this FY 2016 Budget reflect executive management decisions from Bonneville's Capital Allocation Board (CAB) and the associated capital review process. Bonneville utilizes a structured capital project selection process requiring submission of a standardized business case for review by Bonneville. Each business case consists of a description of the project, a clear statement of objectives, description and mitigation of risks, and a rigorous analysis of project costs including a status quo assumption and preferred alternatives. In addition, both annual and end of project targets are set for each project covering cost, scope, and schedule. Progress reports on these targets are provided to Bonneville's senior executives at least quarterly.

The FYs 2015-2020 revenue estimates in this budget, included in the Net Outlay formulation, are calculated consistent with cash management goals. The revenue estimates reflect assumed adjustments, which include the use of a combination of tools, including: upcoming rate adjustment mechanisms; reduced cost estimates; a net revenue risk adjustment; debt management strategies; and/or short-term financial tools to manage net revenues and cash. The revenue estimates also include depreciation and U.S. Treasury repayment credit assumptions. These U.S. Treasury repayment credits offset, among other things, Bonneville's fish and wildlife program costs allocable to the non-power project purposes of the FCRPS, consistent with the Northwest Power Act and other laws.

Overview of Detailed Justifications

In Bonneville's Detailed Justification Summaries, accrued expenditure is the basis of presenting Bonneville's program funding levels in the power and transmission rate making processes and the basis upon which Bonneville managers control their resources to provide products and services. Accrued expenditures relate period costs to period performance. Traditional budget obligation requirements for Bonneville's budget are assumed on the Program and Financing Summary Schedule prepared in accordance with Office of Management & Budget (OMB) Circular A-11.

The organization of Bonneville's FY 2016 Budget and these performance summaries reflect Bonneville's business services basis for utility enterprise activities. Bonneville's major areas of activity on a consolidated budget and accounting basis include power and transmission, with administrative costs included. Power Services includes line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program, Associated Projects O&M Costs, and the Council. Environmental activities are shown in the relevant Power Services and Transmission Services sections, as are reimbursable costs. Bonneville's interest expense, pension and post-retirement benefits and capital transfers to the Treasury are shown by program.

The first section of performance summaries, Capital Investments, includes accrued expenditures for investments in electric utility and general plant associated with the FCRPS generation and transmission services, energy efficiency, fish and wildlife, and capital equipment. These capital investments are estimated to require budget obligations and expected use of $1,052 million in bonds to be issued and sold to the U.S. Treasury in FY 2016.

The near-term forecast capital funding levels have undergone an extensive internal review as a result of the capital asset management strategy. These capital reviews encompass project cost management initiatives, capital investment assessments, and categorization of capital projects to be funded based on risk and other factors. Consistent with Bonneville's near-term capital funding review process and Bonneville's standard operating budget process, this FY 2016 Budget includes updated capital funding levels for FY 2015. Utilizing this review process helps Bonneville in its efforts to compete in the deregulated wholesale energy market. Bonneville will continue to work with the Corps and Reclamation to optimize the best mix of projects.

In addition to its internal management assessment of capital investments, Bonneville has developed and implemented an associated external capital investment review process that provides significant benefits to Bonneville. The combined internal and external processes add value by both improving direction on what the FCRPS invests in (tying investments more closely to agency strategy) and by improving how those investments are made (more detailed analysis and review of capital investments and their alternatives).

Bonneville's second section of the performance summaries, entitled Annual Operating Expenses, includes accrued expenditures for services and program activities financed by power sales revenues, transmission services revenues and projects funded in advance. For FY 2016, budget expense obligations are estimated at $3,041 million. The total program requirements of all Bonneville programs include estimated budget obligations of $4,122 million in FY 2016.

Evidence and Analysis in the Budget

Consistent with the President's emphasis on evidence and evaluation in the budget, Bonneville has undertaken several initiatives and processes to determine appropriate budget expenditures.

Bonneville's Integrated Program Review (IPR) process allows interested parties to see all relevant FCRPS expense and capital spending level estimates in the same forum. The IPR occurs every two years, or just prior to each rate case, and provides participants with an opportunity to review and comment on Bonneville's program level estimates prior to spending levels being set for inclusion in rate cases. In addition, Bonneville's Capital Investment Review (CIR) process allows interested parties to review and comment on Bonneville's draft Asset Strategies and 10-year capital forecasts. The CIR occurs every two years prior to the IPR. The 2014 IPR and CIR processes concluded in 2014.

Bonneville also is focused on institutionalizing operational excellence – continuous improvement that produces more efficient and effective ways to deliver on Bonneville's mission and vision. Bonneville's Strategy Execution organization provides programs and process support to improve business operations, and the quality of outputs, while applying the tools and principles of operational excellence in alignment with the vision of Bonneville's strategic direction. In FY 2012, Bonneville embarked on an extensive assessment of utility benchmarking and elected to adopt a benchmarking program to support meaningful evidence of efficiency and cost-effectiveness. In FY 2013, the Bonneville Benchmarking & Operational Excellence Program comprehensively benchmarked four specific strategic focus areas around Safety, Supply Chain, Reliability Compliance, and Energy Accounting and Determination of Loads. As a result of those efforts, in FY 2014 Bonneville took the data collected and implemented process improvement actions to move its business units towards becoming top quartile performers.

Progress in Human Capital Management

Bonneville's Human Capital Management staff completed the necessary training to regain its delegated examining credentials from the Office of Personnel Management (OPM) and completed its job reconstruction process three months ahead of schedule and under budget. On September 30, 2014, the Department of Energy reinstated all of Bonneville's delegated human resource authorities. This brings to closure 13 months of extensive work to re-establish a fully compliant, high-performing human resource function at Bonneville.

Power Services - Capital
Funding Schedule by Activity

Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Power Services - Capital					
Associated Project Costs	58,187	211,829	240,790	28,961	14%
Fish & Wildlife	37,353	51,807	54,807	3,000	6%
Energy Efficiency	77,887	92,000	94,800	2,800	3%
Projects Funded in Advance[1]	114,700	N/A	N/A	N/A	N/A
Total, Power Services - Capital	288,127	355,637	390,398	34,761	10%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Power Services - Capital					
Associated Project Costs	240,790	269,908	281,266	313,981	334,067
Fish & Wildlife	54,807	30,795	18,646	34,806	35,033
Energy Efficiency	94,800	97,600	100,500	103,600	106,700
Projects Funded in Advance	N/A	N/A	N/A	N/A	N/A
Total, Power Services - Capital	390,398	398,303	400,412	452,387	475,800

[1] Amount is attributable to Bonneville's Prepayment Program.

Program Overview

Associated Project Costs provide for direct funding of additions, improvements, and replacements of existing Reclamation and Corps hydroelectric projects in the Pacific Northwest. The FCRPS hydro projects produce electric power that is marketed by Bonneville.

Maintaining the availability and increasing the efficiency of the FCRPS is critical to ensuring that the region has an adequate, reliable, and low-cost power system. The FCRPS represents about 80 percent of Bonneville's firm power supply and includes 31 operating federal hydroelectric projects with over 200 generating units. These projects have an average age of about 50 years, with some that exceed 60 years of age. Through direct funding and the cooperation of the Corps and Reclamation, Bonneville uses its U.S. Treasury borrowing authority and customer prepayment program to make investments needed to restore generation availability and improve efficiency, reducing demand on Corps and Reclamation appropriations for power-related investments.

Since the beginning of direct funding in FY 1997, Bonneville, along with its joint operating partners, the Corps and Reclamation, has improved system performance. In 1999, at the direction of Congress, Bonneville issued a report that it soon began to implement called the "Asset Management Strategy for the FCRPS." In this report, Bonneville concluded that it needed to invest nearly $1 billion in the hydroelectric projects over the ensuing 12 to 15 years. Supplementary analyses and experience with the system have revealed additional and ongoing investment needs above and beyond the levels originally planned under the 1999 Asset Management Strategy. In 2008, 2010, 2012, and again in 2014, Bonneville updated the System Asset Strategy and refined its understanding of the long-term capital investments needed to preserve system performance.

These planned investments, included in the FY 2016 Budget estimates, will maintain the generation performance of the FCRPS. Moving forward with the cost-effective opportunities to expand the generation and to preserve and enhance the capability of the FCRPS is a smart, economic, and environmentally beneficial decision when compared to purchasing power from the market to serve growing Pacific Northwest electricity needs.

Bonneville's fish and wildlife capital program is directed at activities that improve Columbia River Basin fish and wildlife resources. It includes projects designed to increase juvenile and adult fish passage in tributaries and to increase fish production and survival through construction of hatchery and acclimation facilities, land acquisitions for wildlife and resident fish, and fish monitoring facilities. Capital projects support both Northwest Power Act and ESA-related priorities, integrated with the region's Columbia River Basin Fish and Wildlife Program in order to efficiently meet Bonneville's legal responsibilities to mitigate hydrosystem impacts to Columbia River Basin fish and wildlife and to facilitate salmon and steelhead protection and mitigation.

Bonneville implements projects consistent with the Northwest Power and Conservation Council's (Council) Fish and Wildlife program. Most projects recommended by the Council undergo independent review as directed by the 1996 Energy and Water Appropriations Act, which added section 4(h)(10)(D) to the Northwest Power Act. As a result, the Council appoints an Independent Scientific Review Panel (ISRP) "to review a sufficient number of projects" proposed to be funded through Bonneville's fish and wildlife budget "to adequately ensure that the list of prioritized projects recommended is consistent with the Council's program." The Northwest Power Act further states that "in making its recommendations to Bonneville, the Planning Council shall consider the impact of ocean conditions on fish and wildlife populations; and shall determine whether the projects employ cost effective measures to achieve program objectives." Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council has shifted to a multi-year project review cycle during which the ISRP will review categories of projects grouped together; e.g., all fish and wildlife projects were recently reviewed.

Under the Northwest Power Act, the Council must develop a fish and wildlife program that protects, mitigates, and enhances Columbia River Basin fish and wildlife affected by the federal and non-federal hydroelectric projects in the basin. The Program, including BiOps and Bonneville's long-term agreements, includes prioritized strategies for mitigation actions that help guide project selection to meet Bonneville's responsibilities under the Northwest Power Act, ESA, Clean Water Act, and other laws. When issues arise that potentially trigger the *in lieu* provision of the Northwest Power Act, which prohibits Bonneville from funding mitigation that other entities are authorized or required to undertake, 16 U.S.C. § 839b(h)(10)(A), Bonneville works with the Council and the regional fish and wildlife managers, customers, and tribes, as appropriate, to ensure ratepayers only fund appropriate mitigation.

Bonneville continues a comprehensive approach to integrate the ESA requirements of the FCRPS Biological Opinions with the broad resource protection, mitigation and enhancement objectives of the Council's Program. Bonneville satisfies a major portion of its fish and wildlife responsibilities through projects and activities that implement the Program. These projects include wildlife mitigation settlements for dam impacts, most recently a 2014 agreement addressing impacts in southern Idaho. Projects also include hatcheries and habitat improvements to mitigate for and offset fish habitat lost from the development and operation of the FCRPS. As required under the ESA, Bonneville implements additional measures to avoid jeopardizing listed salmon and steelhead.

The ESA measures are part of the most recent BiOps issued by NOAA in 2008 as supplemented in 2010 and 2014 and USFWS in 2006/2010.

- In February 2006, USFWS issued a BiOp for Libby Dam for the Kootenai River white sturgeon and bull trout. A subsequent Settlement Agreement between USFWS and the Center for Biological Diversity was memorialized by modifying the BiOp in 2008. Additional consultation is occurring as part of the larger USFWS bull trout consultation.
- In 2010 USFWS designated critical habitat for bull trout (following USFWS's issuance in 2000 of a BiOp for FCRPS impacts on bull trout). The Action Agencies (Corps, Reclamation, and Bonneville) are preparing a biological assessment covering FCRPS operational effects on bull trout and designated bull trout critical habitat.
- In May 2008, NOAA issued a FCRPS BiOp for 13 listed species of salmon and steelhead, supplemented in a 2010 Supplemental BiOp that incorporated the Action Agency's Adaptive Management Implementation Plan, and further supplemented in a 2014 Supplemental BiOp. On January 17, 2014, NOAA released its 2014 Supplemental BiOp. The 2008/2010/2014 BiOp is now under legal review.
- In July 2008, USFWS and NOAA issued Willamette River BiOps to address impacts from 13 federal dams on salmon, steelhead, Oregon chub, and bull trout. Implementation of a BiOp measure related to hatchery fish in the McKenzie River was the subject of litigation in Federal District Court. The Action Agencies are currently engaged in discussion with NOAA related to BiOp implementation for downstream passage and for hatchery consultations.

These BiOps collectively require the Action Agencies to implement hydro, habitat, hatchery, and other actions throughout the Columbia River Basin to address impacts stemming from the operation of the federal hydro-electric dams on ESA-listed fish, and to ensure that operations of the federal dams do not jeopardize the continued existence of the listed species or adversely modify their designated critical habitat.

The Action Agencies also signed the 2008 Columbia Basin Fish Accords (Fish Accords or Accords) with five Northwest Tribes, and the states of Idaho and Montana. In 2009, an agreement was signed with the state of Washington and federal agencies (the state of Washington Estuary agreement). And in 2012, the Action Agencies signed an agreement with the Kalispel Tribe of Indians covering Albeni Falls Dam and FCRPS operations. The Fish Accords complement the 2008/2010/2014 BiOp and provide firm commitments to prioritize mitigation actions and secure funding for 10 years. As a result of the 2008 FCRPS BiOp, the Supplemental FCRPS BiOps issued in 2010 and 2014, and the Fish Accords, as discussed below, expenditures above those planned in FY 2009 are required in FY 2011 and beyond.

These BiOps and Fish Accord commitments are integrated along with other projects and implemented through the Council's Program under the Northwest Power Act and are the basis for the Bonneville Fish and Wildlife Program's planned capital investment.

Energy Efficiency is an important part of Bonneville's diverse portfolio of resources that provides a reliable approach to meeting Bonneville's load obligations. When acquiring resources to meet planned future loads, the Northwest Power Act requires the Administrator to first consider and acquire cost-effective conservation that the Administrator determines is consistent with the Council's Power Plan. The Council's 6th Power Plan, finalized in February 2010, established a regional target of 1,200 aMW of energy efficiency in 2010 through 2014. Bonneville, in collaboration with its Public Power Customers, has taken responsibility for Public Power's share of the regional target, approximately 42 percent (504 aMW) of that target. Bonneville anticipates that between 250 and 300 aMW of this amount will be acquired under its capital energy efficiency program. Beginning in FY 2012, at least 70 percent of this energy efficiency budget was allocated to utilities to fund energy efficiency incentives with the remainder going to support regional programs. Program performance measurements ($/aMW) indicate that Bonneville is realizing value for these investments relative to other resources.

In general, long-term investments in energy efficiency help buffer the FCRPS against future resource uncertainties. During periods of price volatility, energy efficiency reduces financial risk associated with relying on the market for energy purchases.

Accomplishments

- Published initial rate proposal for the FYs 2016-2017 rates on December 10, 2014.
- Facilitated integration of 5,085 MW of wind generation through December 2014.
- Completed left powerplant transformer replacements at Grand Coulee.
- Completed turbine runner replacements at Lookout Point and spillway tainter gate rehabilitation at Big Cliff.
- Completed exciter replacements at Little Goose and powerhouse bridge crane rehabilitation at Lower Monumental.
- Completed KY1A transformer, breaker, and exciter replacement at Chandler.
- Completed preferred AC system upgrades and governor replacement at The Dalles.
- The returns of adult salmon and steelhead to the Columbia River system from 2009 to 2013 vary by species, but many stocks (especially Snake River fall Chinook and Snake River sockeye) have returned at the highest numbers in decades. Research shows that survival of juvenile salmon and steelhead migrating down the Snake and Columbia rivers has improved in recent years and is on track to meet performance standards of 96 percent survival per dam for spring-migrating fish and 93 percent survival for summer migrants.

Explanation of Changes

Bonneville's budget includes $390 million in FY 2016 for Power Services capital, which is a 9.8 percent increase over the FY 2015 forecasted level. The FY 2016 level reflects a continuing need for investment in the hydro electric system assets, funding necessary to implement the BiOps, Fish Accords, Columbia Basin Fish and Wildlife activities, and a continued commitment to energy efficiency initiatives by public power within the region.

The FY 2016 budget increases the levels for Associated Projects (+$28.9 million), Fish & Wildlife (+$3.0 million), and Energy Efficiency (+$2.8 million) relative to FY 2015.

Strategic Management

Bonneville provides electric power while supporting the achievement of its vital responsibilities for fish and wildlife, energy efficiency, renewable resources, and low-cost power in the Pacific Northwest. Bonneville will continue to implement the following strategies to serve the region:

1. Bonneville coordinates its power operational activities with the Corps, Reclamation, NERC, regional electric reliability councils, its customers, and other stakeholders to provide the most efficient use of federal assets.
2. Ongoing work with the Corps and Reclamation is focused on improving the reliability of the FCRPS, increasing its generation efficiency, and optimizing hydro facility operation.
3. Bonneville is committed to continue funding efforts to protect listed fish and wildlife species in the Columbia Basin under the ESA and to work closely with the Council, regional fisheries managers, and other federal agencies to prioritize and manage fish and wildlife program projects.
4. Bonneville's utility customers have been, and continue to be, a critical part of Bonneville's collaborative efforts to promote and foster the efficient use of energy.
5. Bonneville has partnered and assisted with a DOE Wind Power crosscutting initiative to strengthen energy security by adding alternative sources of renewable energy.

The following external factors present the strongest risk and impact to overall achievement of the program's strategic goals:

1. Continually changing economic and institutional conditions.
2. Competitive dynamics.
3. Ongoing changes in the electric industry.

Associated Projects

Overview

Bonneville will work with both the Corps and Reclamation to reach mutual agreement on budgeting and scheduling those capital improvement projects that are cost-effective and provide system or site-specific enhancements, increase system reliability, or provide generation efficiencies.

The work is focused on improving the reliability of the FCRPS and on increasing its generation efficiency or capacity through turbine runner replacements, optimizing hydro facility operation, and new unit construction. Also, limited investments may be made in joint-use facilities that are beneficial to both the FCRPS operations and to other Corps and Reclamation project purposes.

Corps of Engineers Projects

($K)		
FY 2014 Actual	**FY 2015 Estimate**	**FY 2016 Estimate**
40,629	160,989	154,324

Bonneville Dam:

- **FY 2014.** Completed gantry crane 7 rehabilitation and headgate refurbishment/replacements. Continued governor replacements, vibration and air gap monitoring installation, main unit breaker and station service reconfiguration, Powerhouse 2 transformer refurbishment, and control room fire protection upgrades. Began Generator Step Up (GSU) transformer instrumentation and governor oil filtration system installation.
- **FY 2015.** Complete governor replacements and vibration and air gap monitoring installation. Continue main unit breaker and station service reconfiguration, governor oil filtration system installation, GSU transformer instrumentation, Powerhouse 2 transformer refurbishment and control room fire protection upgrades.
- **FY 2016.** Complete governor oil filtration system installation. Continue control room fire protection upgrades, Powerhouse 2 transformer refurbishment, GSU transformer instrumentation, main unit breaker and station service reconfiguration. Begin Powerhouse 1 DC and preferred AC upgrades.

John Day Dam:

- **FY 2014.** Completed elevator rehabilitation. Continued governor replacements, DC system upgrades, BLH turbine hub upgrades, station service transformer replacements, and control room fire protection upgrades. Began draft tube bulkhead refurbishment.
- **FY 2015.** Continue governor replacements, DC system upgrades, BLH turbine hub upgrades, draft tube bulkhead refurbishment, station service transformer replacements, and control room fire protection upgrades. Begin transformer and powerhouse oil/water separator and rotor pedestal installation.
- **FY 2016**. Complete governor replacements, DC system upgrades, and draft tube bulkhead refurbishment. Continue BLH turbine hub upgrades, control room fire protection upgrades, transformer and powerhouse oil/water separator, rotor pedestal installation, and station service transformer replacements. Begin 500kV disconnect replacement.

The Dalles Dam:

- **FY 2014.** Completed preferred AC system upgrades and governor replacements. Continued control room fire protection upgrades, SCC control replacement, elevator refurbishments, and tailrace gantry crane refurbishment. Began transformer replacements.
- **FY 2015.** Complete control room fire protection upgrades, SCC control replacement, and elevator refurbishments. Continue tailrace gantry crane refurbishment, and transformer replacements.
- **FY 2016**. Continue transformer replacements and tailrace gantry crane refurbishment. Begin emergency crane rehabilitation.

Willamette Plants:

- **FY 2014.** Completed spillway tainter gate rehabilitation at Big Cliff and turbine runner replacement at Lookout Point. Continued transformer oil/water separator installation at Cougar and Hills Creek. Continued turbine runner replacement at Hills Creek and electrical reliability upgrades at Dexter. Continued governor replacements at Big Cliff, Cougar, Dexter, Detroit, Foster, Lookout Point, and Green Peter. Continued spillway tainter gate

rehabilitation at Dexter and Lookout Point. Continued butterfly valve replacement at Lost Creek. Began electrical reliability upgrades at Foster. Began Generic Data Acquisition and Control System (GDACS) installation and communication system upgrade at all Willamette Valley plants.

- **FY 2015.** Complete spillway tainter gate repair at Lookout Point and Dexter and butterfly valve replacement at Lost Creek. Complete turbine runner replacements at Hills Creek and governor replacement at Green Peter and Foster. Continue governor replacements at Big Cliff, Cougar, Dexter, Detroit, and Lookout Point. Continue electrical reliability upgrades at Dexter and Foster. Continue spillway tainter gate rehabilitation at Green Peter. Continue GDACS installation and communication system upgrade at all Willamette Valley plants. Begin main unit breaker replacement at Green Peter. Begin Hills Creek and Detroit spillway tainter gate rehabilitation.
- **FY 2016**. Complete governor replacements at Big Cliff, Cougar, Dexter, Detroit, and Lookout Point. Complete spillway tainter gate rehabilitation at Green Peter and Hills Creek. Complete electrical reliability upgrades at Dexter. Continue Detroit spillway tainter gate rehabilitation and electrical reliability upgrades at Foster. Continue GDACS installation and communication system upgrade at all Willamette Valley plants. Begin electrical reliability upgrades at Lookout Point.

Albeni Falls Dam:

- **FY 2014.** Completed tailrace stoplogs. Continued spillway crane modernization, spillway gate modifications, and intake crane modernization.
- **FY 2015.** Complete spillway crane modernization, spillway gate modification, and intake crane modernization. Begin transformer replacement and station service switchgear replacement.
- **FY 2016**. Continue transformer replacement and station service switchgear replacement. Begin generator fire suppression system upgrade.

Libby Dam:

- **FY 2014.** Continued powerhouse and dam electrical distribution equipment replacement. Began governor installation.
- **FY 2015.** Continue governor installation and powerhouse and dam electrical distribution equipment replacement. Begin powerhouse DC emergency lighting system installation.
- **FY 2016**. Complete governor installation and powerhouse and dam electrical distribution equipment replacement. Continue powerhouse DC emergency lighting system installation. Begin generator fire suppression system upgrade.

Chief Joseph Dam:

- **FY 2014**. Completed protective relay replacements. Continued exciter replacements, generator cooling system upgrades, DC and preferred AC upgrades, and turbine replacements. Began governor installation and SCC board replacement.
- **FY 2015**. Complete exciter replacement. Continue governor installation, generator cooling system upgrades, DC and preferred AC upgrades, SCC board replacement, and turbine replacements. Begin upgrades for station service units SS01 and SS02.
- **FY 2016.** Complete SCC board replacement. Continue governor installation, generator cooling system upgrades, DC and preferred AC upgrades, upgrades for station service units SS01 and SS02, and turbine replacements. Begin Units 17-27 generator rewinds.

Dworshak Dam

- **FY 2014**. Completed Unit 3 standby generator guide bearing and oil cooler assemblies. Continued powerhouse HVAC upgrade. Began governor replacement and Unit 3 rehabilitation.
- **FY 2015**. Complete powerhouse HVAC upgrade. Continue governor replacement and Unit 3 rehabilitation. Begin upgrade RO valve.
- **FY 2016**. Continue governor replacement and Unit 3 rehabilitation. Continue upgrade RO valve. Begin exciter replacement and tailrace crane rehabilitation.

McNary Dam

- **FY 2014**. Completed generator rewinds for units 4 and 11 and heat pump replacement. Continued generator winding replacements, 4160-480V station service rehabilitation, turbine design and replacement, potable water

system upgrade, and levee drainage pump station upgrades. Begin exciter replacement.

- **FY 2015**. Continue generator winding replacements. Continue turbine design and replacement, 4160-480V station service rehabilitation, exciter replacement potable water system upgrade, and levee drainage pump station upgrades. Begin governor installation.
- **FY 2016**. Complete generator winding replacements and potable water system upgrade. Continue turbine design and replacement, 4160-480V station service rehabilitation, exciter replacement, levee drainage pump station upgrades, and governor installation. Begin isophase bus upgrade.

Ice Harbor Dam

- **FY 2014**. Completed low voltage switchgear SQ board replacements and DC system upgrade. Continued Units 1-3 runner replacements and governor replacement. Continued drainage and dewatering pump upgrade. Began oil storage and handling upgrade and Units 1-3 stator winding replacement.
- **FY 2015.** Complete governor replacement, drainage and dewatering pump upgrade, and oil storage and handling upgrade. Continue Units 1-3 runner replacements and stator winding replacement. Begin HVAC controls upgrade.
- **FY 2016**. Continue Units 1-3 runner replacements, stator winding replacement, and HVAC controls upgrade.

Little Goose Dam

- **FY 2014**. Completed exciter replacements. Continued powerhouse bridge crane rehabilitation. Began governor installation.
- **FY 2015.** Continue governor installations and powerhouse bridge crane rehabilitation. Begin tailrace gantry crane replacement.
- **FY 2016**. Complete governor installation and powerhouse bridge crane rehabilitation. Continue tailrace gantry crane replacement. Begin DSP1 switchgear replacement.

Lower Granite Dam

- **FY 2014.** Continued powerhouse HVAC system upgrade, sewage treatment plant upgrade, and powerhouse bridge crane refurbishment. Began governor replacement and Unit 1 BLH linkage upgrade.
- **FY 2015**. Complete sewage treatment plant upgrade and powerhouse bridge crane refurbishment. Continue governor replacement, powerhouse HVAC system upgrade, and Unit 1 BLH linkage upgrade.
- **FY 2016**. Complete powerhouse HVAC system upgrade. Continue Unit 1 BLH linkage upgrade and governor replacement.

Lower Monumental Dam

- **FY 2014**. Completed powerhouse bridge crane rehabilitation. Continued Unit 1 BLH linkage upgrade and generator rewind. Began governor replacement.
- **FY 2015**. Continue Unit 1 BLH linkage upgrade and generator rewind. Continue governor replacement.
- **FY 2016**. Continue Unit 1 BLH linkage upgrade and generator rewind. Continue governor replacement. Begin ispohase bus rehabilitation.

Bureau of Reclamation Projects
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
17,558	50,841	86,466

Grand Coulee Dam

- **FY 2014.** Completed left powerplant transformer replacements. Continued Supervisory Control and Data Acquisition (SCADA) replacement, 500 kV switchyard relay replacements, purchase of another left and right powerhouse spare winding, units 19-21 upgrades including winding replacements, and Units 22-24 wear ring replacements. Began right powerplant transformer replacements, Units 1-18 stator windings, cores, and spare replacement program, Units 1-18 exciter and governor replacement, and drumgate floating bulkhead. Began station service compressed air system upgrades, powerplant battery replacement, and Units 21-24 transformer replacement.
- **FY 2015.** Complete 500 kV switchyard relay replacements. Continue SCADA replacement, purchase of another left and right powerhouse spare winding, Units 19-21 upgrades including winding replacements, G22-24 wear ring replacements, and right powerplant transformer replacements. Continue powerplant battery replacement, drumgate floating bulkhead, Units 1-18 stator windings, cores, and spare replacement program, Units 1-18 exciter and governor replacement, station service compressed air system upgrades, and Units 21-24 transformer replacement.
- **FY 2016.** Complete powerplant battery replacement. Continue SCADA replacement, G22-24 wear ring replacements, drumgate floating bulkhead, Units 1-18 stator windings, cores, and spare replacement program, Units 1-18 exciter and governor replacement. Continue purchase of another left and right powerhouse spare winding, Units 19-21 upgrades including winding replacements, station service compressed air system upgrades, and Units 21-24 transformer replacement.

Keys

- **FY 2014.** Began P1-P6 exciters, relays and unit controls, PG7-PG12 governors, exciters, relays and unit controls. Began PG7-PG12 circuit breaker replacement, and P5 and P6 impeller and core replacement and rewinds.
- **FY 2015.** Continue P1-P6 exciters, relays and unit controls, PG7-PG12 governors, exciters, relays and unit controls. Continue PG7-PG12 circuit breaker replacement, and P5 and P6 impeller and core replacement and rewinds.
- **FY 2016.** Continue P1-P6 exciters, relays and unit controls, PG7-PG12 governors, exciters, relays and unit controls. Continue PG7-PG12 circuit breaker replacement, and P5 and P6 impeller and core replacement and rewinds. Begin phase reversal switch replacement.

Hungry Horse Dam

- **FY 2014**. Continued SCADA replacement, main unit transformer fire protection system replacement, and station service and MCC upgrades. Began exciter and governor replacement, and powerhouse crane controls.
- **FY 2015.** Continue SCADA replacement and station service and MCC upgrades, main unit transformer fire protection system replacement, powerhouse crane controls, and exciter and governor replacement.
- **FY 2016.** Continue SCADA replacement, main unit transformer fire protection system replacement, station service and MCC upgrades, powerhouse crane controls, and exciter and governor replacement.

Chandler Dam

- **FY 2014.** Completed KY1A transformer and breaker replacement. Completed exciter replacement.
- **FY 2015.** Begin Units 1 and 2 generator rewinds.
- **FY 2016.** Continue Units 1 and 2 generator rewinds.

Palisades Dam

- **FY 2014.** Continued turbine runner replacement and fire detection and alarm system.
- **FY 2015.** Complete fire detection and alarm system. Continue turbine runner replacement.
- **FY 2016.** Continue turbine runner replacement.

Green Springs Dam

- **FY 2014.** Continued exciter and transformer replacement.
- **FY 2015**. Continue and transformer exciter replacement.
- **FY 2016**. Complete exciter and transformer replacement.

Black Canyon Dam

- **FY 2014.** Continued additional unit, units 1 and 2 upgrades, and trash rake system.
- **FY 2015**. Continue additional unit, units 1 and 2 upgrades, and trash rake system.
- **FY 2016**. Continue additional unit, units 1 and 2 upgrades, and trash rake system.

Anderson Ranch Dam

- **FY 2014.** Began station service upgrade.
- **FY 2015**. Continue station service upgrade.
- **FY 2016**. Complete station service upgrade.

Roza Dam

- **FY 2014.** Began switch rehab and breaker upgrade.
- **FY 2015**. Continue switch rehab and breaker upgrade.
- **FY 2016**. Complete switch rehab and breaker upgrade.

Minidoka Dam

- **FY 2014.** Began Units 8 and 9 governor replacement.
- **FY 2015**. Continue Units 8 and 9 governor replacement.
- **FY 2016**. Continue Units 8 and 9 governor replacement.

Fish & Wildlife
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
37,353	51,807	54,807

Overview

Bonneville continues to develop budgets for the suite of mitigation projects originally adopted in FY 2007 based on recommendations from the Council. Bonneville reaffirmed many project-specific commitments in subsequent agreements and processes, including BiOps and Fish Accords, and since then, virtually all these projects received independent science review through the Council and its categorical review processes. Bonneville's funding decisions embrace many of the management objectives and priorities in the Council's Program and continue to integrate ESA responsibilities as described in the NOAA Fisheries' and USFWS's FCRPS BiOps. Coordination continues among Bonneville, Council, federal resource management agencies, states, tribes and others to support the projects that satisfy Bonneville's mitigation responsibilities.

Bonneville intends to continue implementing the kinds of projects listed below. These projects are based upon the best available science and are regionally important in that they provide high priority mitigation and protection actions for fish and wildlife populations affected by the construction and operation of the FCRPS projects. Projects and facilities listed below deliver direct on-the-ground benefits to both ESA listed and non-listed fish and wildlife throughout the Columbia River Basin and have been evaluated and coordinated with the Council, state, federal and tribal fish and wildlife resource managers, local governments, watershed and environmental groups and other interested parties. Specifically, as capital construction projects, these facilities typically go through the Council's three-step process, which includes development of a Master Plan, environmental compliance, ESA consultation, value engineering analysis, and review by the Independent Science Review Panel.

Implementation of reforms to FCRPS hatchery programs that help reduce impacts on ESA-listed species, called for under NOAA Fisheries' FCRPS BiOp, is done with hatchery and fisheries managers who join Bonneville in ESA consultations with NOAA, and USFWS where appropriate, on the development of hatchery genetic management plans, which will establish both specific reforms to individual facilities, as well as priorities for sequencing implementation.

Bonneville also may capitalize investment in some fish and wildlife habitat acquisitions if it provides a creditable and quantifiable benefit against a defined obligation for Bonneville and follows Bonneville's Capitalization Policy.

The three types of fish and wildlife projects that Bonneville capitalizes are as follows:

1) Tributary passage -- Activities that enhance fish passage to tributary rivers. For the purpose of capitalization, a tributary is defined by the Council designated sub-basin of the tributary. Functionally interdependent work elements could contain the following: wells, ladders, screens, pumping, culverts, diversion (irrigation) consolidation, piping to reduce water loss, irrigation efficiencies (drip irrigation), lining of ditches (seepage reduction), removal of objects impeding fish passage, or pushup dams in conjunction with related construction, and construction related habitat restoration.
2) Hatchery facility construction -- Projects and activities relating to the construction of fish hatcheries, including related satellite facilities (acclimation ponds and collection weirs). This may also include construction-related habitat restoration.
3) Land acquisition -- Land acquisition projects protect, enhance, and maintain instream wetland and riparian habitat and provide credit to Bonneville, such as habitat units (HUs) or acres for wildlife or instream miles for resident fish, to fulfill the legal obligation of Bonneville to mitigate the impacts from construction and operation of the FCRPS power facilities.

Anadromous fish supplementation, production, and related facilities that may require capital funds in FY 2016 include the following:

<u>Expenditure Authority requested for the following projects:</u>

- Shoshone Paiute Trout Hatchery: The Shoshone Paiute Tribes of the Duck Valley Reservation propose that Bonneville fund the purchase and/or construction of a trout hatchery. The Tribes would own and operate the hatchery to produce trout for stocking in reservoirs located on the Duck Valley Reservation. Bonneville would fund the capital expenditure to meet contemporary aquaculture standards and achieve fish production goals. The Tribes believe they can reduce federal reservoir stocking costs—some of which Bonneville pays now on an annual basis.

- Spokane Tribal Hatchery: The Spokane Tribal Hatchery, funded by Bonneville in 1989 as partial mitigation for the impacts of the FCRPS, is owned and operated by the Spokane Tribe of Indians. The facility spawns, incubates, and rears Kokanee Salmon and Rainbow Trout near Wellpinit, WA. A 25-year lease agreement for the operation and maintenance of the hatchery expires in 2015. Bonneville has begun work to renew the lease agreement with the Spokane Tribe and expects to renew the lease agreement and plan for potential upgrades for aging infrastructure, including ground water pumps and rearing containers. The work could begin in FY 2016.

-Snake River Sockeye Weirs: Bonneville funds efforts of both the Idaho Department of Fish and Game and the Shoshone Bannock Tribes to rebuild Snake River sockeye throughout their historic range. The combination of substantially increased numbers of returning adults as well as the completion of the Springfield Sockeye Hatchery in 2013 and its associated increased production has created the need for Bonneville to fund the construction, operation, and maintenance of weirs to further sockeye management objectives.

<u>The FY 2014 Omnibus Appropriations Act (Public Law No. 113-76) provided Expenditure Authority for the following projects:</u>

- John Day Reprogramming and Construction: This project is being proposed by the Columbia River Inter-Tribal Fish Commission (CRITFC) under the Accords to work on the balance between upriver and down river salmon hatchery production mitigating for John Day and The Dalles Dams. Final reprogramming facilities and locations are still being analyzed by the Tribes, the Corps, and Bonneville. The project area encompasses the mainstem Columbia River from the base of McNary Dam downstream to The Dalles Dam. Capital dollars for this project will help fund constructing additions to new or existing FCRPS hatchery facilities to accommodate the reprogramming of hatchery fish.

- Columbia River Basin White Sturgeon Hatchery: The Columbia River Basin White Sturgeon Hatchery, proposed by the CRITFC under the Accords, will mitigate for white sturgeon population declines due to consistent poor recruitment upstream of Bonneville Dam. Expected production at a new or existing facility will be 15,000 - 20,000 yearling white sturgeon per year. The final project may include broodstock collection and holding, rearing wild-spawned juveniles, and acclimating juveniles prior to release. A location for the facility has not yet been determined, but it will likely be located within 60 miles of the confluence of the Columbia and Snake Rivers.

- Kelt Reconditioning and Reproductive Success Evaluation Research: CRITFC, under the Accords, is proposing a relatively small holding tank facility to recondition female steelhead (kelts) after they have spawned. The fish will be held and fed until they have rematured and then be released into the Snake River where they will contribute to the spawning run. The capital portion of the project is expected to be constructed in the Snake River Basin, potentially at Lower Granite Dam. As specified in the 2008 FCRPS BiOp and Supplemental FCRPS BiOps issued in 2010 and 2014, Bonneville will implement the kelt reconditioning plan to improve the productivity of Snake River basin B-run steelhead populations that are listed for protection under the ESA. NOAA's analysis of Prospective Actions indicates that a combination of transportation, kelt reconditioning, and in-stream passage improvements (e.g., spill-flow modifications) could increase kelt returns enough to increase the number of returning Snake River B-run steelhead spawners to Lower Granite Dam by a target of 6 percent as specified under the BiOp.

<u>Ongoing Projects (Expenditure Authority previously received):</u>
- Kootenai River Native Fish Conservation Aquaculture Program: The Kootenai Tribe of Idaho has completed the construction of a new hatchery on tribally owned land at the confluence of the Moyie and Kootenai rivers (Twin Rivers). This new facility will address current physical space limitations that has challenged expansion of the existing Tribal Sturgeon Hatchery located near Bonners Ferry. The Twin Rivers site offers high quality ground and surface water needed to support the aquaculture objectives for Kootenai River white sturgeon and burbot. This location may also help to extend the river reaches where Kootenai sturgeon imprint and ultimately return to spawn. Facilities include dual water supplies and filtration, incubation rooms, juvenile rearing tanks and ponds, spawning channels, support facilities and staff housing. The Tribe is also proposing the experimental use of remote streamside incubation and early rearing facilities to imprint Kootenai sturgeon upstream of the new hatchery site. The improvements the Tribe proposed for the existing Tribal Sturgeon Hatchery would enhance sturgeon handling and rearing capabilities. A new spawning room would eliminate the current need to relocate large fish from one building to another. A safer means to transport large adults to and from the river would be provided, in addition to a number of measures to improve fish culture practices and program efficiency and success.

- Crystal Springs Hatchery Facilities: This project is for facilities for rearing and out-planting resident and anadromous fish in central and southern Idaho. The facility is located near the American Falls Reservoir in Idaho. Resident fish that may be produced include Yellowstone Cutthroat. The anadromous fish may include Snake River spring Chinook salmon Snake River steelhead, and Snake River sockeye. The facility is sponsored by the Shoshone-Bannock Tribes under their Accord, who are expected to operate and manage the facility once it is complete. A final Environmental Impact Statement is expected to be complete in 2016.

- Snake River Spring Chinook Salmon artificial propagation facilities (known as the Northeast Oregon Hatchery or NEOH): This project is proposed by the Nez Perce Tribe and is to be located on the Upper Grande Ronde River near La Grande, Oregon, on Catherine Creek near Union, Oregon, and on Lostine River near Enterprise, Oregon. While design has been ongoing for this project for several years, the decision to proceed with construction is pending ESA consultations and approval by NOAA Fisheries of a Hatchery and Genetic Management Plan for the facility. This project, as a measure in the Council's Fish & Wildlife Program, would also identify and develop artificial propagation facilities to protect and enhance salmon and steelhead native to the Imnaha and Grande Ronde River Basins.

- Redfish Lake Sockeye Salmon program: The Snake River sockeye salmon Evolutionarily Significant Unit (ESU) was listed under the Endangered Species Act in 1991 (56 FR 58619). The Snake River Sockeye Salmon Captive Broodstock Program has prevented extinction of endangered sockeye salmon. The program has been able to help successfully conserve the genetic resources of the founding population and begun producing fish for rebuilding the naturally spawning population in Redfish Lake. The program uses state of the art hatchery facilities and fish husbandry protocols, genetic support, and monitoring and evaluation to continue rebuilding numbers of fish. Currently, the program retains replicate, captive broodstock within multiple facilities (Eagle Fish Hatchery (FH) located in Idaho State and Burley Creek FH and Manchester Research Station, both located in Washington State). Eggs produced from these locations are transferred to other facilities (Oxbow FH, located in Oregon State and/or Sawtooth FH located in Idaho State) for release programs. The project continues to expand by increasing the capacity of existing facilities and also acquired a new facility under the Idaho Columbia Basin Fish Accord, the newly constructed Springfield FH located in Idaho for additional smolts as called for in the 2008 FCRPS BiOp. The expanded smolt releases are expected to result in an increase in the abundance and productivity of the naturally-spawning population. This strategy will greatly increase the likelihood of higher adult returns. Additional expansions may include improvements at the Redfish Lake Creek trap and Sawtooth FH weir for holding/trapping an increased number of adults as a result of the increased smolt production from Springfield Hatchery. The biological goals are to increase the number of adults spawning naturally in the Sawtooth Valley and transition the captive broodstock to a conventional hatchery production program that uses anadromous adults as broodstock.

- Chief Joseph Dam Hatchery: Bonneville has funded the construction of Chief Joseph Dam Hatchery Program, primarily a comprehensive management program for supplementing Chinook salmon, to increase the abundance, productivity, distribution, and diversity of naturally spawning populations of summer/fall Chinook in the Okanogan River and in the Columbia River below Chief Joseph Dam, Washington (between the confluence of the Okanogan River and Chief Joseph Dam). Project includes a new hatchery facility (at the base of the Chief Joseph Dam). In addition, the Colville Tribes as sponsors will use the facility to reintroduce extirpated spring Chinook back into the Okanogan Sub-basin. This Accord project includes the new hatchery facility and acclimation ponds (throughout the Okanogan River sub-basin), broodstock collection, egg incubation, rearing, release, and selective broodstock collection method development. Planned production levels are two million summer/fall Chinook and 0.9 million spring Chinook smolts. In 2014-15, the Tribes will complete a three-year experiment testing a temporary weir for capturing adult salmon on the Okonogan River, and Bonneville will work with them and other project partners to decide whether to construct a permanent weir. Bonneville has entered into an agreement with one public utility where that utility will pay a portion of the capital and operation and maintenance costs associated with this hatchery. In addition, Bonneville has agreed with three public utilities to share the operation and maintenance costs. Construction on the hatchery facility was completed in May 2013 and turned over to the Colville Tribes in June 2013.

- Klickitat Production Expansion: The Klickitat River Master Plan was submitted by the Yakama Nation, reviewed by the ISRP, recommended with comments by the Council, and approved by Bonneville in 2008. The plan's goal is to protect and increase naturally producing populations of spring Chinook and steelhead while protecting the biological integrity and the genetic diversity of indigenous fish stocks in the sub-basin. The Klickitat Master Plan includes three main elements: Lyle Falls Fishway upgrades; construction of the Castile Falls enumeration facility; upgrades to the Klickitat hatchery with the potential for constructing a new facility in the lower Klickitat River to accommodate the ongoing production of coho and fall

Chinook; and an acclimation site in the upper watershed at McCreedy Creek. In early 2009 Bonneville completed the Lyle Falls Environmental Impact Statement (EIS) and ROD. Upgrades to enumeration and collection facilities at Lyle and Castile have been completed. Certain upgrades at the Klickitat Hatchery have also been done to maintain existing fish and wildlife program activities and to address hatchery safety concerns. Lyle and Castile Falls fishways have PIT tag interrogation capability, and the Lyle Falls facility includes a lamprey passage structure. A new Klickitat Hatchery Complex EIS initiated in July 2009 will examine options for the development and operation of new production and supplementation facilities and acclimation alternatives, and additional upgrades to the existing hatchery facility. The Yakama Nation issued a revised Master Plan, July 2012, providing updates to their fish management plans. When the EIS is complete and Master Plan accepted, the Council will review the Step 3 recommendation in the Council 3-Step Review process. The final EIS has been held up while the Yakama Nation determines whether it will allow construction on the proposed lower river acclimation site. The EIS is anticipated to be completed shortly after that decision is made and Bonneville will issue a ROD once the NMFS completes the Biological Opinion for the Klickitat Production/Fish Management plans. Bonneville is working with Yakama Nation to identify the highest priority construction actions in the Klickitat Watershed to focus on, given the limited capital budget under the Accord.

- Hood River Production Facility: This project includes expansion of existing Parkdale fish hatchery to accommodate spring Chinook rearing, construction of new Hood River adult salmonid trapping facilities, and development of alternative adult trapping sites. The Powerdale Dam Fish Trap formerly provided the foundation for many of the activities associated with implementation of the Hood River Production Program. These include: monitoring escapement, collecting life history characteristics, and broodstock acquisition. PacificCorps' demolition of its Powerdale Dam and the associated fish trapping facility in 2010 necessitated the development of alternative adult broodstock trapping sites. One permanent fish trap on the West Fork of the Hood River was completed in 2013, and a temporary trapping site is operational on the East Fork Hood River. A permanent trap site on the East Fork is currently being evaluated. The Hood River Production Program has four primary goals: 1) re-establish naturally sustaining runs of spring Chinook in the Hood River; 2) re-build naturally sustaining runs of summer and winter steelhead in the Hood River; 3) maintain genetic characteristics of Hood River fish populations; and 4) provide fish for sustainable harvest by both sport and tribal fishers.

- Mid-Columbia Coho Restoration: Indigenous naturally spawning coho salmon no longer occupy the mid-Columbia River basins. Columbia coho salmon populations were decimated by the early 1900s. For several reasons, including the construction and operation of mainstem Columbia River hydropower projects, habitat degradation, release locations, harvest management, and hatchery practices and genetic guidelines, self-sustaining coho populations have not been re-established in mid-Columbia basins. This Yakama Accord project's vision is to re-establish naturally reproducing coho salmon populations in the Wenatchee and Methow sub-basins at biologically sustainable levels which provide significant harvest in most years. This program will construct a facility on the Wenatchee River for holding and spawning broodstock, incubating eggs, and rearing juveniles. Additional semi-natural ponds will also be constructed in the Wenatchee and Methow sub-basins for acclimating smolts prior to their release. The phased approach, including associated facilities, incorporates development of a mid-Columbia hatchery broodstock, local adaptation to tributaries in the Wenatchee and Methow Basins, and habitat restoration that will benefit coho as well as ESA-listed spring Chinook, steelhead, and bull trout.

- Walla Walla Hatchery: The Walla Walla Hatchery is proposed by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) under their Accord. The Tribes would own and operate the hatchery, which will produce up to 500,000 spring Chinook smolts annually for release into the Walla Walla River. Pre-design has been completed. The next phase of the project, final-design started in the summer of 2013, upon finalization of an NPCC/BPA/CTUIR agreement to proceed. An environmental impact statement, which was started in January 2013, is expected to be completed in 2015. Construction may commence as early as 2015. The facility will hold, spawn, incubate and rear spring Chinook on the South Fork Walla Walla River near Milton-Freewater, Oregon.

- Yakima Coho Facility: This hatchery is proposed by the Confederated Tribes and Bands of the Yakima Nation (YN) under their Accord, and is presented in the Yakima Subbasin Summer and Fall Run Chinook and Coho Salmon Hatchery Master Plan. The Tribe would own and operate the hatchery which will produce 500,000 parr and 200,000 smolts using broodstock collected at Roza and Sunnyside dams. Pre-design is completed. Bonneville will hold the design and construction contract on behalf of the YN, and a Request for Offers is expected to be issued by early 2015. Shortly afterward, Bonneville expects to begin scoping an environmental impact statement. Construction is not expected to begin until 2017.

Potential non-construction capital Wildlife and Resident Fish Habitat Acquisitions (including Conservation Easements) eligible for capitalization are:

- Albeni Falls Wildlife Mitigation
- Palisades and Minidoka Wildlife Habitat Acquisitions
- Black Canyon, Boise Diversion, Anderson Ranch Wildlife Habitat Acquisitions
- Willamette Wildlife Habitat Acquisitions
- Libby and Hungry Horse Reservoirs Resident Fish Acquisitions
- Southern Idaho Habitat Acquisitions

Energy Efficiency
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
77,887	92,000	94,800

Overview

Bonneville's energy efficiency program offers several ways for customer utilities to participate in regional energy efficiency. Program components include: (1) standard offer efficiency measures and custom projects, which result in customer proposals to conserve energy through such programs as residential weatherization, commercial lighting, Heating, Ventilation, and Air Conditioning (HVAC), industrial processes and lighting, irrigated agriculture, etc.; (2) third party delivery programs, such as residential lighting, the Energy Smart Grocer, Energy Smart Industrial, and Green Motors programs; and, (3) programs to help regional federal installations reduce energy use, including federal hatcheries, irrigation districts and work at various dams to help the Corps and Reclamation in their efforts to reduce energy use.

Bonneville's energy efficiency budgets reflect a need to meet aggressive targets from the Council's 6th Power Plan and anticipated targets in the 7th Power Plan. Specifically, Bonneville's energy efficiency targets increased from about 280 aMW under the Council's 5th Power Plan (2005-09) to 504 aMW under its 6th Power Plan (2010-14). The 504 aMW reflects conservation that was expected to be achievable in the service territories of Bonneville's preference customers. In FY 2013, Bonneville was on track to reach the five-year target and FY 2014 performance maintained that momentum. Because the 7th Power Plan is expected late in 2015, Bonneville has examined its level of energy efficiency performance and associated budget against the 6th Power Plan's later years, which call for an incremental 400 aMW of energy efficiency between 2015 and 2017. In meeting its energy efficiency goals Bonneville may employ resource acquisition agreements and billing credits for independent conservation, both authorized by Northwest Power Act section 6, as well as customer self-funded conservation.

Bonneville is considering implementing a resource acquisition proposal to acquire energy savings from a third party that will issue debt to fund the energy savings measures. If adopted, this proposed conservation acquisition would begin in FY 2016.

Activities and Explanation of Changes

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Power Services – Capital $355,637,000	**$390,398,000**	**+$34,761,000**
Associated Projects		**+$28,961/+13.7%**
Milestones[1]: • Complete 500 kV switchyard relay replacements at Grand Coulee. • Complete governor replacements and vibration and air gap monitoring installation at Bonneville dam. • Complete spillway tainter gate repair at Lookout Point and Dexter and butterfly valve replacement at Lost Creek. • Complete fire detection and alarm system at Palisades.	Milestones: • Complete powerplant battery replacement at Grand Coulee. • Complete governor oil filtration system installation at Bonneville dam. • Complete governor replacements at Big Cliff, Cougar, Dexter, Detroit, and Lookout Point. • Complete governor installation and powerhouse bridge crane rehabilitation at Little Goose. • Complete generator winding replacements and potable water system upgrade at McNary dam.	The increase reflects a reshaping of funding needs for investment in the hydro electric system assets.
Fish & Wildlife		**+$3,000/+5.8%**
Milestones: • Continue implementation of the Council's Program, BiOps and Fish Accords.	Milestones: • Continue implementation of the Council's Program, BiOps and Fish Accords.	The increase reflects a long-term, planned effort to reshape funding necessary to implement the BiOps, Fish Accords, Columbia River Basin Fish and Wildlife activities.
Energy Efficiency		**+$2,800/+3.0%**
Milestones: • Continue to support utility incentive programs. • Continue to support regional energy efficiency programs. • Continue supporting energy efficiency at direct serve federal agencies.	Milestones: • Continue to support utility incentive programs. • Continue to support regional energy efficiency programs. • Continue supporting energy efficiency at direct serve federal agencies.	The increase reflects a continuing focus on energy conservation initiatives within the region.

[1] FY 2015 milestones have been updated from the FY 2015 Congressional submission due to updated forecasts.

Transmission Services – Capital
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Transmission Services - Capital					
Main Grid	46,531	128,970	132,664	3,694	3%
Area & Customer Services	10,019	17,538	33,983	16,445	94%
Upgrades & Additions	140,943	310,460	168,129	-142,331	-46%
System Replacements	143,331	247,285	287,040	39,756	16%
Projects Funded in Advance	269,989	30,000	30,000	-	-
Total, Transmission Services - Capital	610,814	734,254	651,816	-82,436	-11%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Transmission Services - Capital					
Main Grid	132,664	184,100	151,891	153,785	124,910
Area & Customer Services	33,983	14,352	966	307	238
Upgrades & Additions	168,129	113,028	63,131	58,448	54,304
System Replacements	287,040	232,999	229,690	232,206	236,804
Projects Funded in Advance	30,000	30,000	30,000	50,000	50,000
Total, Transmission Services - Capital	651,816	574,479	475,678	494,746	466,256

Transmission Services – Capital

Overview

Transmission Services (TS) is responsible for about 75 percent of the Pacific Northwest's high-voltage transmission. TS provides funding for all additions, upgrades and replacements to the Bonneville transmission system, resulting in reliable service to northwest generators and transmission customers. The Bonneville transmission system also facilitates the sale and exchange of power to and from the region.

TS continues to make significant infrastructure improvements and additions to the system to assure reliable transmission in the Northwest. These improvements and additions will help the Bonneville transmission system continue to comply with national reliability standards, replace aging and obsolete equipment, allow for interconnection of needed new generation, and remove constraints that limit economic trade or the ability to maintain the system. Many of the proposed TS project will be funded through Bonneville lease-purchase agreements.

Bonneville's completed infrastructure investments in the last decade that further strengthen the network consist of the following projects: Puget Sound Area Additions, North of Hanford/ North of John Day, Celilo Modernization, Eastern Washington Reinforcement, Grand Coulee-Bell, Kangley–Echo Lake, Shultz-Wautoma, McNary-John Day, and Portland Area Additions.

Congressionally-approved Production Tax Credits (PTC) for renewable energy enacted in 2005 were extended in 2009 to 2012 and most recently again in 2013 and 2014. The incentives created by these credits, along with Renewable Portfolio Standards (RPS) implemented by the states of Oregon, Washington, and California, have spurred a large number of renewable interconnection requests to the Bonneville transmission grid. As of 2014, Bonneville has interconnected a total of 5,085 MW of new renewable qualified generation. Bonneville has more than 10,000 MW in additional renewable (wind, solar, biomass, geothermal, etc.) interconnection requests still remaining in the study queue. The current projections are 5,105 MW interconnected by 2015 and possibly 8,500 interconnected MW total by 2025. Much of the remaining generation demand is the result of the Renewable Portfolio Standards enacted by Oregon and Washington that require utilities to acquire more than 8,000 MW of renewable energy in the Northwest by 2015. Exports to California are limited now by California laws and are expected to remain at 2,000 to 2,500 MW during the same period. Also in the interconnection queue is approximately 800 MW of natural gas fired generation. Efficiency improvements to the FCRPS hydro units that qualify as renewable are also proposed between 2015 and 2021.

In June 2008, Bonneville's first Network Open Season (NOS) received 153 requests from 28 customers for 6,410 MW of new service, about three-fourths for wind energy integration. Bonneville subsequently offered 1,782 MW of new transmission service on its existing system. Bonneville identified four new Main Grid capital projects from the 2008 NOS: (1) McNary-John Day 500 kV transmission line (part of West of McNary Reinforcements Group 1); (2) Big Eddy-Knight 500 kV transmission line and substation (part of West of McNary Reinforcements Group 2); (3) Central Ferry- Lower Monumental 500 kV Reinforcement (formerly Little Goose Area Reinforcement); and (4) I-5 Corridor 500 kV Reinforcement. Construction of the McNary-John Day 500 kV transmission line is complete and Bonneville has begun construction on the Big Eddy-Knight project. The Central Ferry-Lower Monumental 500 kV Reinforcement project began in the spring of 2014 and the I-5 Corridor project is currently undergoing environmental review. If all four projects are constructed they will provide almost 6,000 MW of new transmission service.

Bonneville's second NOS window for new transmission service requests in 2009 resulted in 82 service requests resulting in 34 contracts totaling 1,553 MW. Of that amount, approximately 923 MW represent wind project interconnection requests.

Bonneville's third NOS window in 2010 resulted in new requests totaling 3,759 MW, of which 2,993 MW represent wind integration requests. The 2010 process identified one additional Main Grid capital project, the Montana to Washington project, for which environmental review was begun but is being paused at this time pending review of updated information related to supporting transmission service requests.

After a two- year pause, Bonneville re-started the NOS process in the Spring of 2013. Bonneville's 2013 NOS included 50 transmission service requests from 18 customers for 3,673 MW demand (2,839 MW of Point-to-Point and 834 MW Network) of which 95 MW represent new wind integration requests in the Pacific Northwest. The 2013 NOS did not identify the addition of any new Main Grid capital projects beyond those previously recommended under the prior NOS processes.

As noted, Bonneville's capital program for TS includes a wide variety of specific investments that are determined after internal review and, in some cases, external review. In 2009, TS began implementing best practice frameworks that provide a standardized structure and approach to Asset Management. As a result, TS's Asset Management Strategies, derived from Agency Strategies, drive Bonneville's Asset Plans, which determine its capital and expense needs. On occasion, capital investments must be made on short notice because of unexpected needs, because of the identification of obsolete, worn out, failed, failing, or at-risk systems and facilities, because of system reliability requirements, and because near-term opportunities to install or construct facilities arise as outages occur or as schedules for outages change. For these and other reasons, TS's capital program is fluid and subject to change. Thus, Bonneville is unable to predict with specificity some of the new capital investments in the transmission system. The types of investments may include but are not limited to: arrestor, bus and bus pedestal, circuit breaker, circuit switcher, communication tower, concrete pole, control center mapboard and video wall displays, control house, converter grading capacitors, converter harmonic filters, converter smoothing reactors, converter transformers, current limiting reactor, current limiting resistor, current transformer, digital fault locator, digital cross-connect system (DCS), disconnect switch, engine generator, engineered steel pole, fiber optic cable, fiber terminal, fuel dispensing facility, grounding system, grounding transformer, microwave multiplex transmitter, network management system (NMS), overhead conductor, overhead ground wire, phase measuring unit (PMU), power control assembly (PCA), power transformer, relay, revenue meter, series capacitor, shunt capacitor, shunt reactor, station service transformer, station service inverter, substation dead end tower, substation perimeter fence, switchyard lighting, thyristor, transfer switch, transmission steel tower, voltage regulator, voltage transformer, water/sewer system, wood pole and cross-arm, and other similar items consistent with Bonneville's capitalization policy determinations (such as spacer damper replacements).

Notwithstanding that the capital program for TS is subject to change, Bonneville has identified several general areas where capital program investment will occur.

Bonneville will continue to fund fiber optic communications facilities needed to meet Bonneville's projected operational needs. To the extent that these investments create temporary periods of excess fiber optic capacity, such dark fiber capacity can be made available to telecommunications providers and to non-profits to meet public benefit internet access needs for rural areas and other needs in Bonneville's service area. Bonneville's investments in fiber optics, including the role of the private sector in building fiber optic networks, is consistent with the "Fiber Optic Cable Plan" submitted to Congress on May 24, 2000, accompanying the FY 2000 Energy and Water Development Appropriations Act. In accordance with this plan, when possible, Bonneville will establish partnerships with fiber optic facility and service providers to meet its needs.

In December 2004, the Congress passed and the President signed the Commercial Spectrum Enhancement Act (CSEA, Title II of P.L. 108-494), creating the Spectrum Relocation Fund (SRF) to streamline the relocation of federal systems from certain spectrum bands to accommodate commercial use by facilitating reimbursement to affected agencies of relocation costs. The Federal Communications Commission has auctioned licenses for reallocated federal spectrum, which will facilitate the provision of Advanced Wireless Services to consumers. Funds were made available to agencies in FY 2007 for relocation of communications systems operating on the affected spectrum. These funds are mandatory and will remain available until expended, and agencies will return to the SRF any amounts received in excess of actual relocation costs. The estimated Bonneville cost of this relocation is $48.7 million. The project was completed in November 2013 and the operational system performance was being observed during FY 2014 and early FY 2015 to determine that it has achieved comparable capability as defined under the CSEA. Bonneville determined in December 2014 that comparable capability had been achieved.

As part of the Homeland Security Presidential Directives, Bonneville has completed a physical security assessment of all critical facilities and is implementing security enhancements at these facilities. These security enhancements increase access control to Bonneville's facilities and provide video surveillance and monitoring capabilities.

Bonneville executed a framework planning study to help guide the future development of its Ross Campus. The study identified opportunities to support efficient operations through the creation of functional specialization areas and scalable office strategies to meet current and evolving business needs. Future development of the Ross Campus will be subject to continuing conversations with Bonneville's customers and regional stakeholders.

Accomplishments

- Published initial rate proposal for the FYs 2016-2017 rates on December 10, 2014.
- Integrated 5,085 MW of wind by December 2014 on Bonneville's transmission system.
- Continued construction of the Big Eddy-Knight project.
- Began construction of the Central Ferry-Lower Monumental project.
- Completed the design and began site work for major renovations at Celilo (PDCI Project).
- Continued development, implementation and refinement of Asset Management Strategies for Sustain and Expand Programs.

Explanation of Changes

Bonneville's budget includes $652 million in FY 2016 for TS (including non-borrowing authority capital) which is an 11 percent decrease from the FY 2015 forecasted level. The decrease reflects reduced investment in Upgrades and Additions driven by a reduction in PDCI projected spending needs as construction nears completion offset by increases in Area and Customer Services and System Replacements to address customer requests and numerous issues with aging and obsolete electric and telecom infrastructure.

The FY 2016 budget decreases the levels for Upgrades & Additions (-$142.3 million). The budget increases levels for Main Grid (+$3.7 million), Area & Customer Services (+$16.4 million) and System Replacements (+$39.8 million). There is no change in funding for PFIA.

Strategic Management

Bonneville provides transmission and energy services while supporting integration of renewable resources in the Pacific Northwest. Bonneville will continue to implement the following strategies to serve the region:

1. To improve system adequacy, reliability and availability, Bonneville has embarked on major transmission infrastructure projects. The projects shore up the region's transmission system and help deliver the region's future power needs. These projects address multiple challenges, such as integration of renewable energy, the need to relieve a number of congested transmission paths, the pressure to keep up with growing energy demands and the need to meet Bonneville's open access policy in support of competitive markets. Specific strategies for these efforts are outlined in the TS Load Service and Generation Integration strategies.

2. Bonneville will continue to replace aging assets that are vital to the reliability of the existing transmission system. To that end, TS has developed specific long term strategies for the following asset categories:
    a. Substations AC
    b. Power System Control/System Telecommunications
    c. Wood Lines
    d. Steel Lines
    e. Rights of Way (ROW), (Land Rights, Access Roads and Vegetation Management)
    f. System Protection and Control
    g. Control Center

The following external factors present the strongest impact to overall achievement of the program's strategic goal:

- Continually changing economic and institutional conditions
- Competitive dynamics
- Ongoing changes in the electric industry
- Siting issues

Main Grid ($K)		
FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
46,531	128,970	132,664

Overview

Bonneville's strategic objectives for Main Grid projects are to assure compliance with the NERC and Western Electricity Coordinating Council (WECC) reliability criteria, provide voltage support, provide a reliable transmission system for open access, and provide for relief of transmission system congestion. During this budgeting period, projects are planned that will provide transmission reinforcement and voltage support to major load areas that are primarily west of the Cascade Mountains. In addition, transmission reinforcements are planned for load centers in central Oregon, central Washington, the Puget Sound area, the Willamette Valley, and along the I-5 Corridor, as well as projects to provide transmission access for new generation projects.

Continued investments in Main Grid assets include:

I-5 Corridor Reinforcement

- **FY 2014**. Continued route analysis and gathering of customer input.
- **FY 2015**. Conclude route analysis and begin design.
- **FY 2016**. Begin construction.

Big Eddy-Knight (West of McNary Reinforcements Group 2)

- **FY 2014**. Continued construction.
- **FY 2015**. Complete construction.

Central Ferry-Lower Monumental 500 kV Reinforcement (formerly Little Goose Area Reinforcement)

- **FY 2014**. Began construction.
- **FY 2015**. Continue construction.
- **FY 2016.** Complete construction.

Midway- Grandview 115 kV Line upgrade

- **FY 2014**. Completed design.
- **FY 2015**. Begin construction.
- **FY 2016**. Continue construction.

Puget Sound Area Northern Intertie (PSANI)

- **FY 2014**. Began design and construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Continue construction.

Tucannon, LaPine, Franklin, White Bluffs, Monroe and McNary (6 separate Capacitor projects)

- **FY 2014**. Continued design and begin construction (Monroe, McNary); completed construction (Tucannon, LaPine, Franklin, White Bluffs).
- **FY 2015**. Complete construction (Monroe, McNary).
- **FY 2016**. Complete remaining projects.

Alvey Substation

- **FY 2014**. Designed the 230 kV and 500 kV Reactor installations.
- **FY 2015**. Begin construction.
- **FY 2016**. Complete construction.

Raver Substation

- **FY 2014**. Completed design of the 500 kV Reactor upgrade.
- **FY 2015**. Complete construction of the 500 kV Reactor upgrade.

Schultz Series Capacitors

- **FY 2015.** Begin design.
- **FY 2016**. Begin construction.

Monroe-Echo Lake 500 kV Line Re-termination #2

- **FY 2015**. Begin design.
- **FY 2016**. Begin construction.

*McNary Sub*station *500/230 Bank Addition*

- **FY 2014**. Began design.
- **FY 2015**. Complete design and begin construction.
- **FY 2016**. Continue construction.

Paul Substation 500kV Shunt Reactor Addition

- **FY 2014**. Began design.
- **FY 2015**. Complete design and begin construction.
- **FY 2016**. Complete construction.

Continue Planning Studies to: (all years)

- Identify infrastructure additions.
- Identify projects driven by NERC and WECC reliability criteria.
- Identify system reactive needs to mitigate unacceptable low or high voltage problems and other system additions.
- Relieve transmission system congestion and integrate new generation facilities.
- Design projects related to the NOS.

Area & Customer Service
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
10,019	17,538	33,983

Overview
Bonneville's strategic objective for Area and Customer Service projects is to assure that Bonneville meets reliability standards and contractual obligations.

Continued investments in Area & Customer Service assets include:
Hooper Springs Substation

- **FY 2014.** Completed design.
- **FY 2015**. Begin construction.
- **FY 2016.** Continue construction.

Capacitor Bank at Kalispel

- **FY 2014**. Completed the design and began construction.
- **FY 2015**. Complete construction.

Continuous Activities (all years)

- Continue preliminary engineering and design for miscellaneous facilities required to meet contractual obligations and maintain reliable service for Bonneville's service area.

Upgrades & Additions
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
140,943	310,460	168,129

Overview
Bonneville's strategic objectives for Upgrades and Additions are to replace older communications and controls with newer technology including fiber optics in order to maintain or enhance the capabilities of the transmission system; to implement special remedial action control schemes to accommodate new generation and mitigate immediate operational and market constrained paths; and to support communications and remedial action schemes, among other proposals.

During this budget period, Bonneville will complete design, material acquisition, construction and activation of several fiber optics facilities to provide bandwidth capacity and high-speed data transfers to eventually replace microwave analog radios, which are technologically obsolete and nearing the end of their useful life. Temporarily, in some areas, excess dark fiber capacity is being offered for a term to telecommunications providers or to public entities such as public utilities, schools, libraries, and hospitals, providing them access to high-speed telecommunication services as a public benefit.

Continued investments in Upgrades & Additions assets include:
VHF Radio System Upgrade
- **FY 2014**. Continued construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Continue construction.

Synchrophasor Project
- **FY 2014**. Continued construction at multiple sites.
- **FY 2015**. Continue construction at multiple sites.
- **FY 2016.** Continue construction at multiple sites.

Pacific DC Intertie from 3,100 MW to 3,800 MW Project
- **FY 2014**. Completed design and began site work for upgrade.
- **FY 2015**. Begin construction for upgrade.
- **FY 2016**. Continue construction.

Ross-Schultz Fiber Circuit Upgrade
- **FY 2014**. Began construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Continue construction.

Bell-Boundary #DC SONET Ring Upgrade
- **FY 2014.** Began construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Continue construction.

Operational Megabit Ethernet (OMET) System
- **FY 2014**. Continued design and began construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Continue construction.

Power Control Assembly (PCAs) for smaller substations
- **FY 2014**. Installed units 1-2, design and ordered units 3-9.
- **FY 2015**. Install units 3-9, design and order units 10-15.
- **FY 2016**. Install units 10-15.

Longhorn Annex for UEC

- **FY 2014**. Completed design, purchased land and materials, began construction.
- **FY 2015**. Continue construction.
- **FY 2016**. Complete construction.

500 kV Spares at Wind Integration Substations

- **FY 2015**. Begin design for site 1.
- **FY 2016**. Begin construction for site 1 and design for site 2.

Continuous Activities (all years)

- Upgrading two miles of fiber between Bonneville Power House and Bonneville Control House.
- Planning, design, material acquisition and construction of special remedial action control schemes required for interconnecting new generation projects and mitigating immediate constrained paths.
- Planning, design, material acquisition and construction of various system additions and upgrades necessary to maintain a reliable system for Bonneville's service area.
- Construction of secondary fiber related projects and digital radio system upgrades to improve the operational telecommunication system.
- Material procurement and construction to upgrade the main fiber optic backbone system (#KC and #NC systems).
- Continue to upgrade control houses and standby engine generators at various locations.

System Replacements
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
143,331	247,285	287,040

Overview
Bonneville's strategic objectives for the Sustain Program are to replace high-risk, obsolete, and maintenance-intensive facilities and equipment and to reduce the chance of equipment failure by: (1) replacing high voltage transformers and power circuit breakers which are at or near the end of their useful life; (2) replacing risky, outdated and obsolete control and communications equipment and systems, and includes mandated replacements due to legislation; and (3) replacing all other existing high-risk equipment and facilities affecting the safety and reliability of the transmission system. Transmission Services uses a total economic cost (TEC) model to determine priorities for replacement.

Continued investments in System Replacements assets include:
Continuous Activity (all years)

Non-Electric Replacements
- Continue non-electric replacements as necessary.
- Continue the design, material acquisition, and construction for the Access Road program capital component and the Land Rights program capital component in support of the Lines and ROW Programs.
- Continue design and construction of capital improvements for identified existing facilities.

Electric Replacements
- Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria. Such replacements include relays, annunciators, oscillographs, metering and various types of communication related equipment replacing and migrating analog to digital technology and SCADA equipment.
- Continue replacement of under-rated and high maintenance substation equipment.
- Continue replacing spacer dampers on various 500 kV lines.
- Continue replacing critical, operational tools and marketing business systems at the Dittmer and Munro Control Centers.
- Continue replacing deteriorating wood pole transmission line structures, spacer dampers and insulators with NCI.

Projects Funded in Advance
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
269,989	30,000	30,000

Overview

This category includes those facilities and/or equipment where Bonneville retains control or ownership but which are funded or financed by a third party or with reserves, either in total or in part. This program also includes investments associated with the Commercial Spectrum Enhancement Act (CSEA).

Continued investments in PFIA assets include:

Continuous Activity (all years)

- Continue to integrate various new generation and line/load projects into Bonneville transmission grid based on requests placed and processed in accordance with transmission tariff.
- Continue planning studies to identify system impacts and needs regarding proposed new generation projects.
- Engineer and begin construction of several large wind generation interconnection substations.
- Complete environmental cleanup and other work necessary for the sale of Bonneville facilities.
- Continue the design and construction for various radio replacements at accessible sites associated with the CSEA.

Central Ferry Substation

- **FY 2014**. Completed construction.

Activities, Milestones, and Explanation of Changes

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Transmission Services – Capital $734,254,000	**$651,816,000**	**-$82,436,000**
Milestones: • Begin construction of Midway- Grandview 115kV Line upgrade. • Complete construction of the Big Eddy-Knight project. • Continue construction of the PSANI project. • Continue construction of Central Ferry Lower Monumental.	Milestones: • Continue construction of Midway- Grandview 115kV Line upgrade. • Continue construction of the PSANI project. • Complete construction of Central Ferry Lower Monumental.	The decrease reflects reduced investment in Upgrades and Additions driven by a reduction in PDCI projected spending needs as construction nears completion offset by increases in Area and Customer Services and System Replacements to address customer requests and numerous issues with aging and obsolete electric and telecom infrastructure.
Area & Customer Service		**+$16,445/+93.8%**
Milestones: • Begin construction of Hooper Springs Substation.	Milestones: • Continue construction of Hooper Springs Substation.	The increase reflects the addition of the Hooper Springs project.

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Upgrades & Additions Milestones: • Begin design for site 1 for 500kV spares at wind integration substations. • Continue construction at multiple sites of the Synchrophasor project. • Begin construction for the upgrading of the Pacific DC Intertie from 3,100 MW to 3,800 MW project.	Milestones: • Begin construction of site 1 and design for site 2 for 500kV spares at wind integration substations. • Continue construction at multiple sites of the Synchrophasor project. • Continue construction for the upgrading of the Pacific DC Intertie from 3,100 MW to 3,800 MW project.	**-$142,331/-45.8%** The decrease reflects reductions in the Pacific Direct Current Line (PDCI) project as construction nears completion.
Systems Replacements Milestones: • Continue design and construction of capital improvements for identified existing facilities. • Continue non-electric replacements as necessary. • Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria.	Milestones: • Continue design and construction of capital improvements for identified existing facilities. • Continue non-electric replacements as necessary. • Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria.	**+$39,756/+16.1%** The increase is due to an increase in the number of replacement projects.
PFIA Milestones: • Continue to integrate new generation as requested. • Continue planning studies on needs and impacts of proposed new generation.	Milestones: • Continue to integrate new generation as requested. • Continue planning studies on needs and impacts of proposed new generation.	**$0/0%** No change in funding identified.

Capital Information Technology & Equipment/Capitalized Bond Premium
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	30,204	34,669	37,356	2,687	8%
Capitalized Bond Premium	0	0	2,000	2,000	2,000%
Total, Capital IT & Equipment/Capitalized Bond Premium	30,204	34,669	39,356	4,687	14%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	37,356	28,794	10,896	6,477	4,141
Capitalized Bond Premium	2,000	2,000	2,000	2,000	2,000
Total, Capital IT & Equipment/Capitalized Bond Premium	39,356	30,794	12,896	8,477	6,141

Capital Information Technology & Equipment/Capitalized Bond Premium

Overview

Capital Information Technology (IT) provides for the acquisition of general and some dedicated special purpose capital information technologies, and acquisition of special-use capital and IT equipment in support of Bonneville's strategic objectives. This category also includes Bonneville's on-going efforts to facilitate delivery of a highly resilient organization, able to anticipate, withstand and effectively respond to disruptive events affecting it and its partners in the Northwest region. The four main areas of resiliency focus continue to include asset management, emergency management, crisis management and continuity of operations.

Bonneville continues to move its IT infrastructure to a more efficient architecture. This FY 2016 Budget supports this effort. IT continues to eliminate redundancies in tools and applications, establish an agency-wide IT architecture with standardized IT purchasing criteria, standardize software licensing processes and minimize agency liabilities through stronger contracts, apply continuous improvement practices to IT project management, and implement an agency IT portfolio cost management strategy. The IT estimates in this FY 2016 Budget, under Capital IT and Equipment include all IT functions within the agency except TS grid operations. See the Capital Program – TS section of this budget for additional discussion of grid operations-related IT requirements acquisitions.

Capital equipment provides for the acquisition of general and some dedicated special purchases of capital office furniture and equipment.

Bonneville can incur a bond premium when it repays a U.S. Treasury bond before the due date. When bonds are refinanced and premiums are incurred, the bond premiums can be capitalized. Historically, Bonneville generally has chosen to finance capitalized bond premiums with bonds issued to the U.S. Treasury, as envisioned by the Transmission Act.

Capital IT & Equipment
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
30,204	34,669	37,356

Overview
This category includes enhancements to Bonneville's information technology processes to provide cost effective efficiencies for secure, timely and accurate information. Investments will enable continued enhancements to Bonneville's Enterprise systems that are designed to link key information systems throughout Bonneville and improve business processes. Current efforts include continued functional process improvements in areas not included in the initial development phase. Other investments include acquisition of capital office furniture and equipment, capital automated data processing (ADP) based administrative telecommunications equipment, ADP equipment (hardware), and support of capital software development for certain Bonneville programs.

Continued investments in Capital IT & Equipment assets include:
Continuous Activity (all years)
Capital system developments in support of:

- Corporate IT Projects
- IT Infrastructure Projects
- Power IT Project
- Transmission Services IT Projects

Capitalized Bond Premium
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
0	0	2,000

Overview
Continue to assess financial market and when cost-effective, refinance available bonds as prudent.

Activities, Milestones, and Explanation of Changes

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Capital Information Technology & Equipment/Capitalized Bond Premium $34,669,000	**$39,356,000**	**+$4,687,000**
Milestones: Capital system developments in support of: • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects	Milestones: Capital system developments in support of: • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects	The increase reflects ongoing emphasis on business resiliency efforts.
Capital Bond Premiums Milestones: • Bonneville does not expect to refinance any federal bonds with premium in FY 2015.	Milestones: • Possible refinancings of outstanding federal bonds.	**+$2,000/+2,000%** The increase reflects possible refinancings of federal bonds with premium in FY 2016.

Power Services – Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Power Services - Operating Expenses					
Production	1,532,435	1,062,935	1,152,349	89,414	+8%
Associated Projects Costs	411,331	428,078	454,869	26,791	+6%
Fish & Wildlife	231,781	260,000	267,000	7,000	+3%
Residential Exchange Program	201,345	203,900	217,100	13,200	7%
NW Power & Conservation Council	9,727	10,784	11,236	452	+4%
Energy Efficiency & Renewable Resources	73,375	90,453	92,800	2,347	+3%
Total, Power Services - Operating Expenses	2,459,994	2,056,150	2,195,355	139,204	+7%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Power Services - Operating Expenses					
Production	1,152,349	1,225,142	1,198,137	1,050,671	1,045,814
Associated Projects Costs	454,869	464,286	471,846	479,399	498,032
Fish & Wildlife	267,000	274,000	281,000	288,000	295,000
Residential Exchange Program	217,100	217,100	238,600	238,600	251,600
NW Power & Conservation Council	11,236	11,446	11,629	11,812	12,004
Energy Efficiency & Renewable Resources	92,800	85,791	86,503	87,213	87,962
Total, Power Services - Operating Expenses	2,195,355	2,277,766	2,287,716	2,155,695	2,190,412

Power Services – Operating Expense

Overview

Production includes all Bonneville non-federal debt service (including Energy Northwest debt service), O&M costs for power system generation resources (including a large nuclear plant, business operations, short- and long-term power purchases[4]), electric utility marketing of power, and oversight of hydro and nuclear projects. Bonneville develops products and services to meet the needs of Bonneville customers and stakeholders, and acquires power as needed.

In FY 2010, Bonneville completed a long-term Resource Program to guide potential future resource acquisitions needed to meet Bonneville's supply obligations. In the event that Bonneville does acquire output from a resource on a long term basis, Bonneville will modify its budget to reflect the acquisition. Bonneville is proposing to acquire conservation from a third party beginning in FY 2016.

Associated Projects represents funding for operation and maintenance costs for the FCRPS, minor additions, improvements and replacements, and liabilities of the Corps and Reclamation hydroelectric projects in the Pacific Northwest, which serve many purposes. All agencies emphasize efficient power production from existing facilities and improvement of the performance and availability of power generating units. Bonneville pays additional financing costs of the FCRPS facilities through its Interest Expense and Capital Transfer budget programs. Bonneville provides funding for the operations and maintenance costs that are part of the Lower Snake River Compensation Plan (LSRCP) hatcheries. Bonneville is responsible for annual payments to the Confederated Tribes of the Colville Reservation for their claims concerning their contribution to the production of hydropower by the Grand Coulee Dam in accordance with the Settlement Agreement between the United States and the Tribes (April 1994).

Bonneville's Fish and Wildlife program provides for extensive protection, enhancement, and mitigation of Columbia River Basin fish and wildlife adversely affected by the development and operation of federal hydroelectric projects on the Columbia River and its tributaries from which Bonneville markets power. Bonneville satisfies most of its fish and wildlife responsibilities by funding projects and activities designed to be consistent with the Council's Program developed pursuant to Section 4(h) of the Northwest Power Act. Through the Council's Program Bonneville also implements measures to aid in the protection of fish in the Columbia River and its tributaries, listed as threatened or endangered under the ESA. Bonneville pursues a comprehensive approach to integrate the ESA requirements of the FCRPS biological opinions with the broad resource protection, mitigation and enhancement objectives of the Council's Program (see ESA discussion in the Power Capital Overview section).

Bonneville's mitigation and recovery expenditures will focus on activities that benefit Columbia River Basin fish and wildlife resources, following priorities established through ESA consultations and the Council's Program, including:

- increase survival of ESA-listed and non-listed fish at FCRPS dams and reservoirs;
- increase survival of ESA-listed and non-listed fish throughout their life cycle by protecting and enhancing important habitat areas;
- reform hatchery practices that affect ESA-listed populations and use hatcheries to contribute to conservation and recovery of ESA-listed and non-listed fish;
- provide for offsite mitigation projects and habitat, passage, and other improvements that address limiting factors for target species;
- reduce harvest-related mortality on ESA-listed and non-listed fish and encourage sustainable fisheries; and
- support a focused and well-coordinated research, monitoring, and evaluation program.

To the extent possible, Bonneville is integrating the actions implemented in response to the FCRPS BiOps with projects implemented under the Council's Program. Sub-basin plans and Accords that include prioritized strategies for mitigation actions will help guide project selection that meets Bonneville's ESA, Clean Water Act, Northwest Power Act, and other responsibilities. In order to address the *in lieu* provision of the Northwest Power Act, which prohibits Bonneville from funding mitigation that other entities are authorized or required to undertake, Bonneville continues its ongoing work with

[4] Including expenses associated with the use of power financial instruments to hedge Bonneville's exposure to market price risk and certain index sales contract provisions as permitted by Bonneville's Power Transacting Risk Management Policy.

the Council and the regional fish and wildlife managers, customers, and Tribes to review projects to ensure ratepayers fund appropriate mitigation. For example, Bonneville established a cost sharing Memorandum of Understanding (MOU) with the U.S. Forest Service in 2005, and renewed it in 2010, that requires a programmatic 30 percent cost share for fish mitigation projects funded by Bonneville on U.S. Forest Service lands. Bonneville continues to operate in a cooperative manner with the U.S. Forest Service.

The Energy and Water Development Appropriations Act of 1996 added section 4(h)(10)(D) to the Northwest Power Act, directing the Council to appoint an ISRP "to review a sufficient number of projects" proposed to be funded through Bonneville's fish and wildlife budget "to adequately ensure that the list of prioritized projects recommended is consistent with the Council's Program." The Northwest Power Act further states that "in making its recommendations to Bonneville, the Council shall consider the impact of ocean conditions on fish and wildlife populations and shall determine whether the projects employ cost effective measures to achieve program objectives." Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council has shifted to a multi-year project review cycle during which the ISRP reviews categories of projects grouped together; e.g., all fish and wildlife projects were recently reviewed.

The Council's major activities include the periodic preparation of a Northwest Conservation and Electric Power Plan (a 20-year electric energy demand and resources forecast and conservation program – known as the Power Plan) and a Columbia River Basin Fish and Wildlife Program. The Northwest Power Act directs that expenses of the Council, subject to certain limits based on forecasted Bonneville power sales, shall be included in Bonneville's annual budget to Congress. Funding for the Council is provided by Bonneville and is recovered through Bonneville power rates.

Bonneville will acquire conservation resources consistent with the Council's Power Plan and act as a catalyst for energy efficiency. Such actions will: 1) meet energy efficiency targets; 2) achieve a least cost resource mix; 3) lessen the cost impacts of power purchases; 4) avoid the costs of ramping programs and infrastructure up and down; 5) extend the value of the FCRPS to customers; and 6) build the region's resource portfolio with energy efficiency. Bonneville is also exploring how best to integrate demand-side management, distributed generation, and other leading edge technologies (i.e., Energy Web and Smart Grid applications) into its generation and transmission planning processes.

The Residential Exchange Program (REP) was created by the Northwest Power Act to extend the benefits of low-cost federal power to the residential and small farm customers of Pacific Northwest electric utilities that have high average system costs. Currently, the region's six investor-owned utilities (IOUs) and two of the region's consumer-owned utilities are actively participating in the REP. Payments under the REP are made to individual IOUs based on the difference between Bonneville's utility-specific PF Exchange rates and each utility's average system cost (ASC), times a utility's residential and farm loads. The process and calculation of ASCs are governed by the 2008 Average System Cost Methodology (ASCM). Participating utility ASCs are established in a public process that occurs prior to and during Bonneville's power rate case. Bonneville's utility-specific Priority Firm (PF) Exchange rates are determined each rate period. As described below, Bonneville and regional parties reached a settlement of the REP in 2011 in which the total amount of REP benefits available to the IOUs has been settled through 2028. Payments to the IOUs are made monthly based on historical invoiced exchange loads.

Over the past decade, regional parties have filed multiple lawsuits challenging BPA's implementation of the REP. These lawsuits have been consolidated into four cases currently pending before the U.S. Court of Appeals for the Ninth Circuit. On July 26, 2011, Bonneville adopted a regionally supported settlement, referred to as the 2012 REP Settlement, which should resolve or render moot many legal challenges to Bonneville's implementation of the REP. The settlement reduces a significant element of litigation uncertainty and risk from Bonneville's power rates for the vast majority of utilities in the region. Under the Settlement, the Region's six IOUs will receive about $4.1 billion in REP payments over the 17-year term of the settlement, beginning at $182.1 million in FY 2012 and increasing to $286.1 million in FY 2028. Distribution of the REP payments among the IOUs will be determined each rate period based on the difference between the utilities' respective ASCs and Bonneville's utility-specific PF Exchange rates. In addition to this settlement, Bonneville has reached related REP settlements with two consumer-owned utilities, only one of which is currently receiving REP benefits. A single challenge to the 2012 REP Settlement was rejected by the U.S. Court of Appeals for the Ninth Circuit in October of 2013. Following this decision, Bonneville and other settling parties requested the U.S. Court of Appeals for the Ninth Circuit to dismiss the REP matters from the pending litigation. To date, the Court has not ruled on this matter.

Explanation of Changes

Bonneville's budget includes $2,195 million in FY 2016 for Power Services operating expenses, which is a 6.8 percent increase over the FY 2015 forecasted level. The increase reflects continuing emphasis on operation and maintenance of hydro generation projects on the FCRPS.

The FY 2016 budget increases the level for Production (+$89.4 million), and increases the levels for Associated Projects (+$26.8 million), Fish & Wildlife (+$7.0 million), Planning Council (+$0.5 million), Energy Efficiency & Renewable Resources (+$2.3 million) and Residential Exchange (+$13.2 million).

Production
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
1,532,435	1,062,935	1,152,349

Overview

Power Purchases: Includes purchased power to cover power supply obligations as well as balancing loads with generation from the hydro system. These purchases can be made in the form of long-term purchases to meet supply obligations based on long-term planning requirements or they can be made within the year due to the monthly shape of the loads and the monthly shape of the hydro electric generation. Also, purchases can be made within the month and within the day to fill shortages due to fluctuations in the hydro system and load changes.

Power Scheduling/Marketing: Schedule and market (buy/sell) electric energy with Bonneville customers and the Pacific Northwest's interconnected utilities. Scheduling includes Power Services' implementation of physical and memo power schedules and associated transmission schedules, implementation of Electronic Tagging (ETag) in accordance with NERC and in accordance with FERC, implementation of electronic scheduling and the ColumbiaGrid as it evolves.

Columbia Generating Station (formerly WNP-2): Continue to acquire full capability of CGS. CGS is on a 24-month fuel and outage cycle. A maintenance and refueling outage is planned for the Spring of calendar year 2015.

Continued investments in Production include:
-Continuous Activity (all years)

- Provide oversight of all signed contracts including oversight of large thermal generating plants from which Bonneville purchases capability to ensure that all Bonneville approval rights are protected; coordinate, communicate, and administer agreements, issues, and programs between Bonneville and the project owners.
- Continue to provide wind resource integration services for customer wind generation.
- Power Purchases. Power expenditures could increase somewhat due to the implementation of the Oversupply Management Protocol.
- Power Scheduling/Marketing.
- Continue to provide oversight of all contracts signed to date. Pursue cost-effective means to mitigate capacity demands associated with interconnecting large amounts of wind into the Bonneville system. Pursue acquisition of additional cost-effective renewable generation to meet load growth. Continue to provide oversight on the wind resource integration services currently purchased by public power customers and offer additional renewable resource shaping services to such customers using wind generation to serve their load.

Associated Projects
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
411,331	428,078	454,869

Overview

Support FCRPS project costs and work to strengthen interagency and regional relationships to improve project performance, supporting functions, and to better understand project resource requirements and costs. This helps to maintain FCRPS reliability and system performance, as well as to attain Bonneville's strategic business objectives.

Continued investments in Associated Projects include:
-Continuous Activity (all years)
Bureau of Reclamation:

- Continue direct funding Reclamation O&M power activities.

Corps of Engineers:

- Continue direct funding Corps O&M power activities.

Fish & Wildlife
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
231,781	260,000	267,000

Overview

Bonneville now implements a stable, mature fish and wildlife mitigation program based on recommendations of the region's fish and wildlife management agencies and tribes to the Council. Several recent Council reviews have made additional fish and wildlife project recommendations to Bonneville. Bonneville, in coordination with the Council, reviews new and on-going projects for consistency with the Program. Bonneville reviews and resets project-specific funding commitments annually, including projects under the FCRPS BiOps, Fish Accords, and other agreements. Bonneville informs its funding decisions with the management objectives and priorities in the Council's Program (including Sub-basin Plans and ISRP reviews), and the Accords as it integrates their implementation with actions necessary to fulfill ESA responsibilities as described in the NOAA Fisheries' and USFWS's BiOps. Regular coordination continues among Bonneville, Council, federal resource management agencies, states, tribes and others on implementation priorities.

Continued investments in Fish &Wildlife include:
-Continuous Activity (all years)

- Anadromous Fish: Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008 FCRPS BiOp and Supplemental FCRPS BiOps issued in 2010 and 2014, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, and the Willamette Agreement. Prioritize projects that address the factors that limit mitigation success and that fulfill Bonneville's responsibility for mitigating the impacts from the FCRPS power facilities. Implement and develop activities that protect and enhance tributary and estuary habitat; improve mainstream habitat; reduce potentially harmful hatchery practices on ESA-listed populations; and contribute to sustainable fisheries.
- Resident Fish: Implement activities to determine the impacts of the FCRPS on lamprey, sturgeon and bull trout and mitigate for those impacts, and promote the reproduction and recruitment of Kootenai River white sturgeon. These activities have been selected in response to the USFWS's 2000 bull trout and 2006 Libby BiOp, the Council's Program, and the Fish Accords.
- Continue mitigation using resident fish to offset anadromous fish losses (substitution); mitigate for reservoir power operation impacts to resident fish and wildlife by seeking projects that provide dual benefits, i.e., benefits to both. Those resident fish habitat acquisition projects that meet Bonneville's Capitalization Policy will be funded under the capital portion of Bonneville's Fish and Wildlife budget.
- Wildlife: Use existing Bonneville policies to continue the current effort to mitigate wildlife in a manner consistent with the Council's Program and fulfill commitments in wildlife agreements such as the Kalispel Agreement, Willamette Wildlife Agreement, and Southern Idaho Wildlife Agreement. Those wildlife projects that meet Bonneville's Capitalization Policy will be funded under the capital portion of Bonneville's Fish and Wildlife budget and credited according to Bonneville's crediting policy and applicable mitigation contracts.

Residential Exchange, Northwest Power and Conservation Council, and Energy Efficiency & Renewable Resources

($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
284,447	305,137	321,136

Overview

Residential Exchange Program

- Includes forecasted REP benefits based on the 2012 REP Settlement.

Northwest Power and Conservation Council

- Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.

Energy Efficiency & Renewable Resources

- Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads.

- Provide credible, unbiased information, and technical and financial support to energy efficiency purposes. Bonneville has a statutory responsibility to encourage and support the development of conservation in the Pacific Northwest. Bonneville is participating with other regional entities to support market transformation and development activities that meet the needs of Bonneville customers and create business opportunities for the private sector in the Pacific Northwest. Toward that end, Bonneville has been helping create a delivery infrastructure to ensure conservation savings are installed efficiently and effectively throughout the region.

- Continue to purchase the output from renewable resources such as wind and solar.

Activities, Milestones, and Explanation of Changes

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Power Services - Operating Expense		
$2,056,150,000	**$2,195,355,000**	**+$139,204,000**
Milestones: • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation.	Milestones: • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation.	The increase reflects higher capital related and power purchase costs.
Associated Project Costs		**+$26,791/+6.3%**
Milestones: • Continue direct funding of Corps and Reclamation O&M power activities.	Milestones: • Continue direct funding of Corps and Reclamation O&M power activities.	The increase reflects changes to security, biological opinion requirements, non-routine extraordinary maintenance, WECC/NERC compliance activities, and improvements, replacements, and minor additions at the projects.
Fish & Wildlife Costs		**+$7,000/+2.7%**
Milestones: • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008 and 2010 FCRPS BiOps, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, the Southern Idaho Agreement and the Willamette Agreement.	Milestones: • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008 and 2010 FCRPS BiOps, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, the Willamette Agreement and the Southern Idaho Agreement.	The increase reflects funding associated with Biological Opinions, Fish Accord commitments and Northwest Power Act activities.
Residential Exchange Program		**+$13,200/+6.5%**
Milestones: • Continue to provide REP benefits.	Milestones: • Continue to provide REP benefits.	The increase reflects the scheduled rise in the amount of REP payments payable to the IOUs prescribed by the Residential Exchange Settlement.

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
NW Power & Conservation Council Milestones: • Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.	Milestones: • Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.	**+$452/4.2%** The increase reflects continuing emphasis on NW Power and Conservation Council.
Energy Efficiency & Renewable Resources Milestones: • Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads. • Continue to purchase the output from renewable resources such as wind and solar.	Milestones: • Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads. • Continue to purchase the output from renewable resources such as wind and solar.	**+$2,347/+2.6%** The increase reflects continuing emphasis on energy efficiency program consistent with the Power Plan and increased Renewable Resource acquisition costs.

Transmission Services – Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Transmission Services - Operating Expense					
Engineering	93,453	81,935	82,253	318	.4%
Operations	156,039	170,282	176,033	5,751	3%
Maintenance	182,870	189,873	189,585	-288	-.2%
Total, Transmission Services - Operating Expense	432,362	442,090	447,871	5,781	1%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Transmission Services - Operating Expense					
Engineering	82,253	82,833	84,035	85,245	86,509
Operations	176,033	182,443	186,166	189,939	193,848
Maintenance	189,585	191,556	195,271	199,025	202,929
Total, Transmission Services - Operating Expense	447,871	456,831	465,472	474,209	483,286

Transmission Services – Operating Expense

Overview

This activity provides for the transmission system services of engineering, operations, and maintenance for Bonneville's electric transmission system, and the associated power system control and communication facilities. Primary strategies of this program are: 1) maintain the safety and reliability of the transmission system; 2) increase the focus on meeting customers' needs; 3) optimize the transmission system; 4) provide open and non-discriminatory transmission access; and 5) improve Bonneville's cost effectiveness.

Explanation of Changes

Bonneville's budget includes $448 million in FY 2016 for TS expense which is a 1 percent increase over the FY 2015 forecasted level. The increase reflects continuing operation and maintenance of Bonneville's transmission assets.

The FY 2016 budget increases the levels for Engineering (+$0.3 million) and Operations (+$5.7 million), and decreases the level for Maintenance (-$0.3 million)

Engineering
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
93,453	81,935	82,253

Overview
Continue efforts to identify best methods for improving system reliability and maintenance practices, and continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.

Continued investments in Engineering include:
Continuous Activity (all years)

- Asset Management: Continue deploying the Asset Management approach to sustain the existing assets and expanding the system to meet Agency objectives using ISO 5000 as guidance for improving Asset Management.

- R&D: Conduct research focused on technologies related to business challenges Bonneville faces including reliability, energy efficiency, and integration of renewable energy resources. Technologies of interest are identified in Bonneville's Technology Roadmaps. A portfolio of research is selected every year through Bonneville's Portfolio Decision Framework.

- Technical Support: Provide technical support activities, such as transmission system planning and studies to optimize portions of the system. Provide support for non-wires solutions studies and pilot projects.

- Capital-to-Expense Adjustments: Conduct annual analysis of Bonneville's outstanding capital work orders to assess whether they should be expensed. As obsolete inventory is identified and disposed of, it is expensed.

- Regulatory Fees: WECC dues and loop flow payments, DOC/NTIA licensing costs for radio frequencies, DOE Radio Spectrum staff and contractor support and NERC Critical Infrastructure Protection (CIP) compliance program costs. Includes membership in ColumbiaGrid.

- Reimbursable Transactions: Enter into written agreements with federal and non-federal entities that have work or services to be performed by Bonneville staff at the expense of the benefiting entities. The projects must be beneficial, under agreed upon criteria, to Bonneville operations and to the federal or non-federal entity involved or otherwise be aligned with or supportive of Bonneville's strategic objectives. Additionally, these activities generally contribute to more efficient or reliable construction of the federal transmission system or otherwise enhance electric service to the region.

- Leased and Other Costs: Includes leases and other costs of financing transmission, delivery and voltage support facilities when such arrangements are operationally feasible and cost effective to deliver power. Capitalized leases enable Bonneville to continue to invest in infrastructure to support a safe and reliable system for the transmission of power. Other costs included are the accrued interest costs associated with Large Generator Interconnection Agreements (LGIA).

Operations ($K)		
FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
156,039	170,282	176,033

Overview

Substation Operations: Perform operations functions necessary to provide electric service to customers and to protect the federal investment in electric equipment and other facilities. Includes equipment adjustments, switching lines and equipment during emergencies or maintenance, isolating damaged equipment, restoring service to customers, inspecting equipment, reading meters, etc.

Power System Dispatching and Supporting Functions: Perform central dispatching, control, and monitoring of the electric operation of the federal transmission system. Also includes load, frequency and voltage control of federal generating plants, and coordinating long- and short-term outages of system equipment. In addition, provides technical engineering support of dispatching function and provides all technical and systems support for Dittmer Control Center (DCC) and Munro Control Center (MCC).

Marketing and Sales: Provide management and direction of transmission rates, and provide business strategy in marketing of transmission and ancillary products and services of Transmission Services. Involve customers and constituents in the process of product and rate development. Maintain accurate and complete historical records of current and past legacy transmission agreements. Provide guidance for current and future transmission contract negotiations. Provide financial analysis of market strategies. Monitor and report on the financial health of Transmission Services. Support cost management by effective reporting and analysis of current expenditures. Ensure official budget submittals reflect current management financial strategies and adequately fund transmission programs.

Transmission Scheduling: Provide non-discriminatory, open access to the Bonneville transmission system consistent with Bonneville's Open Access Transmission Tariff (OATT). Schedule transmission capacity to eligible Bonneville customers, which include customers acquiring services under Use of Facilities (UFT), Formula Power Transmission (FPT), Integration of Resources (IR), and Part II or Part III, of the OATT. Manage the reservations and scheduling of all transmission services associated with the OATT. Update practices, policies and commercial systems to accommodate a large diversity of resources, including wind.

Continuous Activity (all years):

- Continue to operate within parameters of NERC and WECC.
- Continue support of increased compliance activities related to the reliability of the transmission system, including cyber security.
- Continue developing facilities, policies, procedures and implementing systems to support integrating the diversity of resources, including wind, into the transmission grid.
- Continue preparation for increased complexity of transmission scheduling, power system operations and dispatching, including congestion management and outage scheduling.
- Continue developing facilities to support the network operations center and one transmission scheduling operations facility.
- Continue developing a long-term approach to optimize transmission availability through streamlined, cost-effective, and sustainable processes.
- Continue to address succession planning issues across key functions.
- Continue development and implementation of business systems and tools.

Maintenance
($K)

FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate
182,870	189,873	189,585

Overview
In all aspects of maintenance, Bonneville is continuing the use of Reliability Centered Maintenance (RCM) practices. The use of RCM practices is focused on improving system reliability, increasing availability and meeting new and existing compliance regulations at lowest lifecycle costs. In addition Bonneville is deploying Asset Management to optimize maintain/replace decision making. Maintenance costs are expected to increase as Bonneville addresses the aging transmission system, meeting Reliability Standards, including Vegetation Management, and environmental constraints associated with construction, enhancement, and maintenance of the system. The Bonneville transmission system encompasses 15,169 circuit miles on over 11,860 right-of-way miles (many of these miles are through rugged, inaccessible terrain).

Continued investments in Maintenance include:
-Continuous Activity (all years)

- Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.
- Continue refining processes and procedures for monitoring and tracking compliance activities related to the reliability of the transmission system.
- Continue to improve system availability performance through new maintenance procedures and work practices.
- Continue to develop and implement work practices and procedures for implementation of a new specialty crew using bare-handing live line practices for maintenance of high-voltage transmission lines.
- Continue increased emphasis on replacement of line hardware (life extension programs for insulators, connectors, dampers & fiber optic cable hardware).
- Continue to prepare for the impact of an expected high attrition rate among Bonneville's aging workforce by recruiting apprentices and replacements for critical minimum crew size workload positions.
- Increase outage-scheduling planning and coordination to increase customer satisfaction and system availability.
- Maintain vegetation management levels to ensure system reliability.
- Continue access road work to provide reliable access to facilities and ensure environmental compliance.
- Continue improving environmental stewardship.

Transmission Line Maintenance: Maintain and repair 15,169 circuit miles of high voltage transmission lines, of which over 7,617 km (4,734 circuit miles) are 500 kV transmission extra-high voltage (EHV). Maintenance of EHV lines is two and one-half times more labor-intensive than maintenance of lower transmission voltages, although more efficient in transmission of power. This responsibility includes maintaining transmission rights-of-way to ensure system reliability, safety, and environmental compliance. Adopt work practices that improve system availability, reliability, and compliance.

Right-of-Way Maintenance: Maintain over 11,860 of Bonneville's right-of-way miles. This responsibility includes vegetation management, danger tree management, and access road maintenance to ensure system reliability, safety, and environmental compliance. Adopt procedures and processes that improve system availability, reliability, environmental compliance, and reliability compliance. Continue to deploy new technologies such as LiDAR (Light Detection and Ranging) to reliably and cost-effectively manage vegetation.

Substation Maintenance: Maintain and repair the transmission system power equipment located in Bonneville's 260 substations. Work includes inspections, diagnostic testing, and predictive and condition-based maintenance.

System Protection Maintenance: Maintain relaying metering and remedial action scheme equipment used to control and protect the electrical transmission system and to meter energy transfers for the purpose of revenue billing. Additionally,

field-engineering services provide technical advice and assure the correct operation of power system relaying and special control systems used to support interregional energy transmission capabilities.

Power System Control Maintenance: Test, repair, and provide field engineering support of Bonneville's highly complex equipment, communications, and control systems, including seven major microwave systems, fiber optic systems, and other critical communications and control equipment that support the power system.

Non-Electric Plant Maintenance: Maintain and manage Bonneville's non-electric facilities. Includes site, building, and building utility maintenance; custodial services; station utility; and other maintenance service activities, as well as, facilities asset management on Bonneville-owned or Bonneville-leased non-electric facilities.

Maintenance Standards and Engineering: Establish, monitor, and update system maintenance standards, policies, and procedures, and review and update long-range plans for maintenance of the electric power transmission system.

Activities, Milestones, and Explanation of Changes

FY 2015 Estimate	FY 2016 Estimate	Explanation of Changes FY 2016 vs FY 2015 Estimate (Dollars in Thousands)
Transmission Services - Operating Expense		
$442,090,000	**$447,871,000**	**+$5,781,000**
Milestones: • Continue efforts to identify best methods for improving system reliability and maintenance practices. • Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.	Milestones: • Continue efforts to identify best methods for improving system reliability and maintenance practices. • Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.	The increase reflects emphasis on system reliability standards compliance and research and development.
Operations		**+$5,751/+3.4%**
Milestones: • Continue to operate within parameters of NERC and WECC. • Continue support of increased compliance activities related to the reliability of the transmission system including cyber security.	Milestones: • Continue to operate within parameters of NERC and WECC. • Continue support of increased compliance activities related to the reliability of the transmission system including cyber security.	The increase reflects continued emphasis on reliability compliance activities, wind integration activities, security, and control center systems support.
Maintenance		**-$288/-.2%**
Milestones: • Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.	Milestones: • Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.	The decrease reflects a small reduction in the implementation of facilities asset management plans, continued implementation of live-line crew, NERC/WECC compliance activities related to land rights and vegetation management, continuing maintenance program activities, including system protection, right-of-way, line maintenance, and performance improvements.

Interest, Pension and Post-retirement Benefits
Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Interest, Pension and Post-retirement Benefits					
BPA Bond Interest (Net)	137,733	140,796	115,304	-25,492	-18%
BPA Appropriation Interest	14,514	14,257	14,091	-166	-1%
Corps of Engineers Appropriation Interest	160,959	160,606	169,668	9,062	6%
Lower Snake River Comp Plan Interest	16,525	16,525	16,525	-	0%
Bureau of Reclamation Appropriation Interest	43,615	43,526	43,616	90	.2%
Bond Premiums Paid/Discounts (not capitalized)	-40,000	0	0	0	-
` Subtotal, Interest – Operating Expense	333,370	375,710	359,204	-16,506	-4%
Additional Pension and Post-retirement Benefits	37,002	37,638	38,286	648	2%
Total, Interest, Pension and Post-retirement Benefits	370,372	413,348	397,490	-15,858	-4%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Interest, Pension and Post-retirement Benefits					
BPA Bond Interest (Net)	115,304	149,556	199,734	223,091	251,131
BPA Appropriation Interest	14,091	10,078	7,466	1,083	250
Corps of Engineers Appropriation Interest	169,668	166,850	162,736	156,157	157,782
Lower Snake River Comp Plan Interest	16,525	16,525	16,525	16,525	16,525
Bureau of Reclamation Appropriation Interest	43,616	43,616	43,616	40,457	40,457
Bond Premiums Paid/Discounts (not capitalized)	0	0	0	0	0
Subtotal, Interest – Operating Expense	359,204	386,626	430,078	437,313	466,145
Additional Pension and Post-retirement Benefits	38,286	39,226	39,814	40,412	41,018
Total, Interest, Pension and Post-retirement Benefits	397,490	425,852	469,892	477,725	507,162

Interest, Pension and Post-retirement Benefits
Operating Expense

Overview

Interest expense provides for the payment of interest due on bonds issued to the U.S. Treasury and appropriations repayment responsibilities. The appropriation repayments relate to capital investment in FCRPS hydroelectric generating and transmission facilities of Bonneville, the Corps and Reclamation. Investments were financed by Congressional appropriations and Bonneville borrowings from the U.S. Treasury. Bonneville repays these amounts through revenue raised in its power sales and transmission services revenues.

Since receiving U.S. Treasury borrowing authority in 1974 under the Transmission Act, all Bonneville U.S. Treasury borrowing has been at market rates. As of October 1, 1996, all of Bonneville's repayment obligations on FCRPS appropriated investment (Corps and Reclamation FCRPS investment and Bonneville investment financed with appropriations prior to the Transmission Act that were unpaid as of September 30, 1996) were restructured and assigned new current-market interest rates. The Bonneville Appropriations Refinancing Act of 1996 (Refinancing Act) called for resetting (reducing) the unpaid principal of FCRPS appropriations and reassigning (increasing) interest rates. New principal amounts were established as of the beginning of FY 1997 at the present value of the principal and annual interest payments Bonneville would make to the U.S. Treasury for these obligations in the absence of the legislation, plus $100 million. The new principal amounts were assigned prevailing market interest rates as of October 1, 1996. Bonneville's outstanding appropriations repayment obligations at the end of FY 1996 were $6.6 billion with a weighted average interest rate of 3.4 percent. The refinancing reduced the principal amount to $4.1 billion with a weighted average interest rate of 7.1 percent. Implementation of the refinancing took place in 1997 after audited actual financial data were available. Pursuant to the legislation, Bonneville submitted its calculations and interest rate assignments implementing the Refinancing Act to the U.S. Treasury for its review and approval. The U.S. Treasury approved the implementation calculations in July 1997. The Refinancing Act also calls for all future FCRPS appropriations to be assigned prevailing U.S. Treasury yield curve interest rates. Bonneville's outstanding appropriations are subject to early prepayment prior to their stated maturities.

Interest estimates are a direct function of costs of U.S. Treasury borrowing to Bonneville, repayment status of outstanding FCRPS investments, and projected additions to FCRPS plant in service. These estimates may change over time depending on forecasted market conditions. The interest cost estimates include the impact of Bonneville's appropriation refinancing legislation.

Federal employees associated with the operation of the FCRPS participate in either the Civil Service Retirement System or the Federal Employees Retirement System. Employees may also participate in the Federal Employees Health and Benefit Program and the Federal Employee Group Life Insurance Program. All such postretirement systems and programs are sponsored by the Office of Personnel Management; therefore, Bonneville does not record any accumulated plan assets or liabilities related to the administration of such programs. Bonneville makes additional annual contributions to the General Fund of the U.S. Treasury (receipt account 892889) related to the Federal post-retirement benefit programs provided to employees associated with the operation of the FCRPS. These payments were begun with the FY 2001 Administration's budget which assumed Bonneville would prospectively cover the unfunded liability that accrues in fiscal years after FY 1997 of the Civil Service Retirement and Disability Fund (Disability Fund), the Employees Health Benefits Fund (Health Fund), and the Employees Life Insurance Fund (Insurance Fund) that it had not covered prior to FY 1998. Bonneville's additional annual contributions include amounts relating to pension and post-retirement benefits for Bonneville and the power-related portion of the Corps and Reclamation projects.

Capital Transfers
Funding Schedule by Activity
Funding ($K)

	FY 2014 Actual	FY 2015 Estimate	FY 2016 Estimate	FY 2016 vs FY 2015 $	FY 2016 vs FY 2015 %
Capital Transfers					
BPA Bond Amortization[1]	246,000	111,151	52,871	-58,280	-52%
Reclamation Appropriation Amortization	0	0	0	0	0%
BPA Appropriation Amortization	0	98,119	55,347	-42,772	-44%
Corps Appropriation Amortization	321,000	0	98,682	98,682	98,682%
`Total, Capital Transfers	567,000	209,270	206,900	-2,370	-1%

Outyears ($K)

	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate
Capital Transfers					
BPA Bond Amortization[1]	52,871	87,032	13,840	536,297	499,339
Reclamation Appropriation Amortization	0	0	44,125	0	0
BPA Appropriation Amortization	55,347	36,051	88,369	11,565	3,462
Corps Appropriation Amortization	98,682	98,196	117,817	11,054	137
Total, Capital Transfers	206,900	221,279	264,151	558,916	502,938

Overview

This activity conveys funds to the U.S. Treasury for repayment of certain FCRPS costs not included in the Associated Project Costs budget. Since capital transfers are cash transactions, they are not considered budget obligations.

[1] Bonneville "Bond(s)" in this FY 2016 Budget refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act (P.L. 93-454), which defines Bonneville bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

Bonneville Power Administration
Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program.

	FY 2014	FY 2015	FY 2016
Performance Goal (Measure)	**BPA Hydropower Generation Efficiency Performance -** Achieve 97% Heavy-Load-Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. HLHA is actual machine capacity available during heavy-load hours (0700-2200 Monday-Saturday), divided by planned available capacity during heavy-load hours.		
Target	≥ 97.5%	≥ 97.5%	≥ 97.5%
Result	Target Met: 100.7%	Not yet available	Not yet available
Endpoint Target	Maintain at least 97.5% Heavy-Load-Hour Availability.		
Performance Goal (Measure)	**BPA Repayment of Federal Power Investment Performance -** Meet planned annual repayment of principal on Federal power investments.		
Target	≥ 100%	≥ 100%	≥ 100%
Result	Target Met: 100%	Not yet available	Not yet available
Endpoint Target	Continue to meet planned annual repayment of principal.		
Performance Goal (Measure)	**BPA System Reliability Performance - NERC Rating** - Attain average North American Reliability Council (NERC) compliance ratings for NERC Control Performance Standard 1 (CPS1) which measures generation/load balance on one-minute intervals (rating > or = 100%).		
Target	CPS1 ≥ 100%	CPS1 ≥ 100%	CPS1 ≥ 100%
Result	Target Met: 130.39%	Not yet available	Not yet available
Endpoint Target	Maintain CPS1 score of >= 100%.		

Additional Tables

BONNEVILLE POWER ADMINISTRATION
TOTAL OBLIGATIONS/OUTLAYS
Current Services
(in millions of dollars)

BP-1 SUMMARY[1/3/]	FISCAL YEAR 2014		2015		2016		2017	2018	2019	2020
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	201	201	204	204	217	217	217	239	239	252
2 Power Services [2/]	1,944	1,944	1,491	1,491	1,607	1,607	1,689	1,670	1,530	1,544
3 Transmission Services	773	773	1,146	1,146	1,070	1,070	1,001	911	919	900
4 Conservation & Energy Efficiency	151	151	182	182	188	188	183	187	191	195
5 Fish & Wildlife	269	269	312	312	322	322	305	300	323	330
6 Interest/ Pension [4/]	370	370	413	413	397	397	426	470	478	507
7 Associated Project Cost - Capital	58	58	212	212	241	241	270	281	314	334
8 Capital Equipment	30	30	35	35	37	37	29	11	6	4
9 Planning Council	10	10	11	11	11	11	11	12	12	12
10 Misc. Accounting Adjs.	0	0	0	0	0	0	0	0	0	0
11 Projects Funded in Advance	385	385	30	30	30	30	30	30	50	50
12 Capitalized Bond Premiums	0	0	0	0	2	2	2	2	2	2
13 **TOTAL OBLIGATIONS/ OUTLAYS** [3/]	**4,192**	**4,192**	**4,036**	**4,036**	**4,122**	**4,122**	**4,164**	**4,112**	**4,063**	**4,129**

REVENUES AND REIMBURSEMENTS

Current Services

(in millions of dollars)

FISCAL YEAR

	BP-1 SUMMARY	2014		2015		2016		2017	2018	2019	2020
		Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
14	Revenues [5/]	3,169	3,169	3,849	3,849	4,036	4,036	4,084	4,085	4,065	4,105
15	Project Funded in Advance	385	385	30	30	30	30	30	30	50	50
16	**TOTAL**	**3,554**	**3,554**	**3,879**	**3,879**	**4,066**	**4,066**	**4,114**	**4,115**	**4,115**	**4,155**
	BUDGET AUTHORITY (NET) [6/]	**623**		**888**		**845**		**753**	**596**	**347**	**396**
17	**OUTLAYS (NET) [6/7/8]**		**262**		**157**		**56**	**50**	**(2)**	**(51)**	**(26)**

These notes are an integral part of this table.

1/ This FY 2016 budget includes capital and expense estimates based on IPR and CIR initial proposed spending for FYs 2015-2017 and forecasted data for FYs 2018-2020.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

2/ Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency, and Associated Project Costs which have been shown separately for display purposes.

3/ This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

4/ See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

5/ Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies, and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

6/ BPA received $48.7 million of additional budget authority in FY 2007 to accommodate the work necessary to relocate the radio spectrum consistent with the Commercial Spectrum Enhancement Act (P.L. 108-494). BPA anticipates returning the forecasted unused balance of approximately $8.2 million to the U.S. Treasury in FY 2015.

7/ Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

8/ FY 2015 Net Outlays are calculated using Bonneville's revenue forecast from the BP-14 rate case. FYs 2016 & 2017 Net Outlays are calculated using Bonneville's revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FY 2020 assumes a 1% growth in Offsetting Collections.

EXPENSED OBLIGATIONS/OUTLAYS [1,4/]
Current Services
(in millions of dollars)
FISCAL YEAR

BP-2	2014		2015		2016		2017	2018	2019	2020
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	201	201	204	204	217	217	217	239	239	252
2 Power Services [2/]	1,944	1,944	1,491	1,491	1,607	1,607	1,689	1,670	1,530	1,544
3 Transmission Services	432	432	442	442	448	448	457	465	474	483
4 Conservation & Energy Efficiency	73	73	90	90	93	93	86	87	87	88
5 Fish & Wildlife	232	232	260	260	267	267	274	281	288	295
6 Interest/ Pension [3/]	370	370	413	413	397	397	426	470	478	507
7 Planning Council	10	10	11	11	11	11	11	12	12	12
8 TOTAL EXPENSE	3,263	3,263	2,912	2,912	3,041	3,041	3,160	3,223	3,108	3,181
9 Projects Funded in Advance	385	385	30	30	30	30	30	30	50	50

CAPITAL OBLIGATIONS/OUTLAYS [1/]

Current Services

(in millions of dollars)

FISCAL YEAR

BP-2 continued	2014		2015		2016		2017	2018	2019	2020
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
10 Conservation & Energy Efficiency	78	78	92	92	95	95	98	101	104	107
11 Transmission Services	341	341	704	704	622	622	544	446	445	416
12 Associated Project Cost	58	58	212	212	241	241	270	281	314	334
13 Fish & Wildlife	37	37	52	52	55	55	31	19	35	35
14 Capital Equipment	30	30	35	35	37	37	29	11	6	4
15 Capitalized Bond Premiums	0	0	0	0	2	2	2	2	2	2
16 **TOTAL CAPITAL INVESTMENTS**	**544**	**544**	**1,095**	**1,095**	**1,052**	**1,052**	**974**	**859**	**906**	**898**
17 **TREASURY BORROWING AUTHORITY TO**										
18 **FINANCE CAPITAL OBLIGATIONS [4/]**	**544**		**1,095**		**1,052**		**974**	**859**	**906**	**898**

These notes are an integral part of this table.

[1/] This FY 2016 budget includes capital and expense estimates based on IPR and CIR initial proposed spending for FYs 2015-2017 and forecasted data for FYs 2018-2020.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

[2/] Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

[3/] See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

[4/] This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

BP-3

CURRENT SERVICES

(in millions of dollars)

	CAPITAL TRANSFERS	**FISCAL YEAR**						
	Amortization:	**2014 Pymts**	**2015 Pymts**	**2016 Pymts**	**2017 Pymts**	**2018 Pymts**	**2019 Pymts**	**2020 Pymts**
19	BPA Bonds	246	111	53	87	14	536	499
20	Reclamation Appropriations					44		
21	BPA Appropriations		98	55	36	88	12	3
22	Corps Appropriations	321	0	99	98	118	11	0
23	**TOTAL CAPITAL TRANSFERS**	**567**	**209**	**207**	**221**	**264**	**559**	**503**
		STAFFING						
24	**FULL-TIME EQUIVALENT (FTE)**	**2,893**	**3,100**	**3,100**	**3,100**	**3,100**	**3,100**	**3,100**

PROGRAM & FINANCING SUMMARY

Current Services

(in millions of dollars)

Identification Code: 89-4045-0-3-271

		2014	2015	est. 2016	2017	2018	2019	2020
Program by activities:								
	Operating expenses:							
0.01	Power Services	1,543	1,063	1,152	1,225	1,198	1,051	1,046
0.02	Residential Exchange Program	201	204	217	217	239	239	252
	Associated Project Costs:							
0.05	Bureau of Reclamation	141	143	157	158	161	163	165
0.06	Corps of Engineers	226	232	244	251	255	259	274
0.07	Colville Settlement	20	21	22	22	23	23	23
0.19	U.S. Fish & Wildlife Service	31	32	32	33	34	34	35
0.20	Planning Council	8	11	11	11	12	12	12
0.21	Fish & Wildlife	231	260	267	274	281	288	295
0.23	Transmission Services	415	442	448	457	465	474	483
0.24	Conservation & Energy Efficiency	73	90	93	86	87	87	88
0.25	Interest	337	376	359	387	430	437	466
0.26	Pension and Health Benefits [1/]	37	38	38	39	40	40	41
0.91	**Total operating expenses [2/]**	**3,264**	**2,912**	**3,040**	**3,160**	**3,224**	**3,107**	**3,181**
	Capital investment:							
1.01	Power Services	58	212	241	270	281	314	334
1.02	Transmission Services	341	704	622	544	446	445	416
1.03	Conservation & Energy Efficiency	78	92	95	98	101	104	107
1.04	Fish & Wildlife	37	52	55	31	19	35	35
1.05	Capital Equipment	30	35	37	29	11	6	4
1.06	Capitalized Bond Premiums	0	0	2	2	2	2	2
1.07	**Total Capital Investment [3/]**	**544**	**1,095**	**1,052**	**974**	**860**	**906**	**898**
2.01	Projects Funded in Advanced	385	30	30	30	30	50	50
10.00	**Total obligations [4/]**	**4,192**	**4,036**	**4,122**	**4,164**	**4,112**	**4,063**	**4,129**

These notes are an integral part of this table.

[1/] See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

[2/] Assumes expense obligations, not accrued expenses.
Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency, and Associated Project Costs which have been shown separately for display purposes.

[3/] Assumes capital obligations, not capital expenditures.

[4/] This FY 2016 budget includes capital and expense estimates based on IPR and CIR initial proposed spending for FYs 2015-2017 and forecasted data for FYs 2018-2020.

For purposes of this table, this FY 2016 budget reflects, for FY 2014, actual third party financing expense only for PFIA.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988 regarding Bonneville's ability to obligate funds.

Program and Financing (continued)

Current Services

(in millions of dollars)

		2014	2015	est. 2016	2017	2018	2019	2020
Financing:								
1000	Unobligated balance available, start of year. [5/]	8	8	0	0	0	0	0
1050	Unobligated balance available, end of year.[5/]	8	8	0	0	0	0	0
1900	**Budget authority (gross)**	**4,191**	**4,774**	**4,920**	**4,867**	**4,711**	**4,462**	**4,551**
Budget Authority:								
1400	Permanent Authority: Authority to borrow from Treasury (indefinite) [6/]	603	1,095	1,052	974	860	906	898
1800	Spending authority from off-setting collections	3,554	3,879	4,066	4,114	4,115	4,115	4,155
1825	Portion applied to debt reduction	(246)	(209)	(207)	(221)	(264)	(559)	(502)
1850	**Spending authority from offsetting collections (adjusted)**	**1,761**	**3,679**	**3,868**	**3,893**	**3,851**	**3,556**	**3,653**
900	Total obligations	4,192	4,036	4,122	4,164	4,112	4,063	4,129
4100	Outlays (gross)	4,192	4,036	4,122	4,164	4,112	4,063	4,129
Adjustments to budget authority and outlays:								
	Deductions for offsetting collections:							
4120	Federal funds	(42)	(90)	(90)	(90)	(90)	(90)	(90)
4121	Interest on Federal Securities	2						
4123	Non-Federal sources	(3,514)	(3,789)	(3,976)	(4,024)	(4,025)	(4,025)	(4,065)
4130	Total, offsetting collections	(3,554)	(3,879)	(4,066)	(4,114)	(4,115)	(4,115)	(4,155)
4160	**Budget authority (net)**	**623**	**895**	**854**	**753**	**596**	**347**	**396**
4170	**Outlays (net) [7/8/]**	**262**	**157**	**56**	**50**	**(2)**	**(51)**	**(26)**

These notes are an integral part of this table.

[5/] Reflects estimated cost for radio spectrum fund.

[6/] The Permanent Authority: Authority to borrow (indefinite) from the U.S. Treasury amounts reflect both Bonneville's capital program financing needs and either the use of, or creation of, deferred borrowing. Deferred borrowing is created when, as a cash and debt management decision, Bonneville uses cash from revenues to liquidate capital obligations in lieu of borrowing from Treasury. This temporary use of cash on hand instead of borrowed funds creates the ability in future years to borrow money, when fiscally prudent. The FY 1989 Energy and Water Development Appropriations Act (P.L. 100-371 0f 7/19/88) confirmed that Bonneville has authority to incur obligations in excess of U.S. Treasury borrowing authority and cash in the BPA fund.

[7/] Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies, and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

[8/] FY 2015 Net Outlays are calculated using Bonneville's revenue forecast from the BP-14 rate case. FYs 2016 & 2017 Net Outlays are calculated using Bonneville's revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FY 2020 assumes a 1% growth in Offsetting Collections.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4A

Fiscal Year

	2014				2015			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	3,090	2,548	3,989	3,944	3,388	2,846	4,287	4,242
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	544	544	544		1,095	1,095	1,095	
Treasury Borrowing (Cash)				544				1,095
Less:								
BPA Bond Amortization	246	246	246	246	111	111	111	111
Net Increase/(Decrease):	298	298	298	298	984	984	984	984
Cum.-End-of-Year: Total	3,388	2,846	4,287	4,242	4,372	3,830	5,271	5,226
Total Remaining Treasury Borrowing Amount				3,458				2,474
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2016 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2014-2020.

Cumulative advance amortization payments as of the end of FY 2014 are $3,060 million.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4B

	2016				2017			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	4,372	3,830	5,271	5,226	5,371	4,829	6,270	6,225
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	1,052	1,052	1,052		974	974	974	
Treasury Borrowing (Cash)				1,052				974
Less:								
Total BPA Bond Amortization	53	53	53	53	87	87	87	87
Net Increase/(Decrease):								
Total	999	999	999	999	887	887	887	887
Cum.-End-of-Year: Total	5,371	4,829	6,270	6,225	6,258	5,716	7,157	7,112
Total Remaining Treasury Borrowing Amount				1,475				588
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2016 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2014-2020.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4C Fiscal Year

	2018				2019			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	6,258	5,716	7,157	7,112	7,103	6,561	8,002	7,957
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	859	859	859		906	906	906	
Treasury Borrowing (Cash)				859				906
Less:								
Total BPA Bond Amortization	14	14	14	14	536	536	536	536
Net Increase/(Decrease):								
Total	845	845	845	845	370	370	370	370
Cum.-End-of-Year: Total	7,103	6,561	8,002	7,957	7,473	6,931	8,372	8,327
Total Remaining Treasury Borrowing Amount				(257)				(627)
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2016 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2014-2020.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4D

	Fiscal Year 2020			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	7,473	6,931	8,372	8,327
Plus: Annual Increase				
Cum.-Annual Treasury Borrowing	898	898	898	
Treasury Borrowing (Cash)				898
Less:				
Total BPA Bond Amortization	499	499	499	499
Net Increase/(Decrease):				
Total	399	399	399	399
Cum.-End-of-Year: Total	7,872	7,330	8,771	8,726
Total Remaining Treasury Borrowing Amount				(1,026)
Total Legislated Treasury Borrowing Amount				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2016 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2014-2020.

BONNEVILLE POWER ADMINISTRATION
POTENTIAL THIRD PARTY FINANCING TRANSPARENCY
(in millions of dollars)

BP-5

		Fiscal Year						
Transmission Services - Capital		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Main Grid	Requirements	47	129	133	184	152	154	125
Area & Customer Services		10	18	34	14	1	0	0
Upgrades & Additions		141	310	168	113	63	58	54
System Replacements		143	247	287	233	230	232	237
Projects Funded in Advance		270	30	30	30	30	50	50
Total, Transmission Services - Capital		**611**	**734**	**652**	**574**	**476**	**495**	**466**
Associated Project Costs - Capital								
Associated Project Costs	Requirements	58	212	241	270	281	314	334
Projects Funded in Advance[1/]		115	NA	NA	NA	NA	NA	NA
Total, Associated Project Costs - Capital		**173**	**212**	**241**	**270**	**281**	**314**	**334**
Federal and Non-Federal Funding								
Projects Funded in Advance	Sources	385	30	30	30	30	50	50
Treasury Borrowing Authority		399	916	863	814	727	759	750
Scenario								
Projects Funded in Advance[1/]	Scenario	115	170	35	0	0	0	0
Third Party Financing		245	250	250	250	250	250	250
Alternate Treasury Borrowing Authority		NA	496	578	564	477	509	500

These notes are an integral part of this table.

[1/] In this instance, Projects Funded in Advance represents prepayment of Power customers' bills reimbursed by future credits and third party non-federal financing for Conservation initiatives. Power Prepays will be included in this category in the future, depending on customer interest in participation.

The table above shows both the potential use of Treasury borrowing authority for transmission capital projects based on this FY 2016 budget and the use adjusted for potential third-party financing to fund appropriate capital expenditures when feasible in lieu of Treasury borrowing. Estimates included in this FY 2016 budget are uncertain and may change due to revised capital investment plans, changing economic conditions, and an evolving financial market environment. The estimates of third-party financing included in the table show a reduction in the use of Treasury borrowing and do not reflect the actual notional third party financing commitment BPA may enter into in that particular year. The difference of reduction in use of Treasury borrowing and

Bonneville's Third Party Financing for Transmission Services consists primarily of lease-purchase agreements, which are capitalized obligations that enable BPA to acquire the use of transmission facilities over time. BPA also undertakes the construction and installation of facilities from funds that customers advance to BPA for construction of BPA-owned facilities that assist the customers in obtaining necessary transmission service from BPA. These customers receive monetary payment credits in bills for transmission services from BPA up to the amount of funds advanced to BPA, plus interest.

BPA's historical Third Party Financing amounts may vary over time due to re-assignment of certain lease-purchase agreements to Treasury Financing.

BPA Status of Treasury Borrowing with Potential Third Party Financing & PFIA Scenario

With the potential use of third party financing assumed in the scenario above, BPA's total remaining Treasury Borrowing Amount would be extended to the following amounts. See BP-4 BPA Status of Treasury Borrowing- Current Services.

	Fiscal Year						
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Start-of-Year: Total Bonds Outstanding	3,944	4,242	4,806	5,520	6,157	6,752	6,872
Plus:							
Treasury Borrowing (Cash)	544	1,095	1,052	974	859	906	898
Less:							
Potential Third Party Financing & PFIA	NA	420	285	250	250	250	250
BPA Bond Amortization	246	111	53	87	14	536	499
Net Increase/(Decrease) Bonds Outstanding:	298	564	714	637	595	120	149
Cum.-End-of-Year: Total	4,242	4,806	5,520	6,157	6,752	6,872	7,021
Total Remaining Treasury Borrowing Amount	3,458	2,894	2,180	1,543	948	828	679
Total Legislated Treasury Borrowing Amount	7,700	7,700	7,700	7,700	7,700	7,700	7,700

U.S. TREASURY PAYMENTS

(in millions of dollars)

		FISCAL YEAR						
		2014	2015	2016	2017	2018	2019	2020
A.	**INTEREST ON BONDS & APPROPRIATIONS**							
	Bonneville Bond Interest							
1	Bonneville Bond Interest (net)	88	141	115	150	200	223	251
2	AFUDC [1/]	50	39	44	42	42	50	52
	Appropriations Interest							
3	Bonneville	15	14	14	10	7	1	0
4	Corps of Engineers [2/]	161	161	170	167	163	156	158
5	Lower Snake River Comp. Plan	17	17	17	17	17	17	17
6	Bureau of Reclamation [3/]	44	44	44	44	44	40	40
7	Bond Premiums paid/Discounts (not capitalized)	-40	0	0	0	0	0	0
8	**Total Bond and Approp. Interest**	**333**	**414**	**403**	**429**	**472**	**488**	**518**
B.	**ASSOCIATED PROJECT COST**							
9	Bureau of Reclamation Irrigation Assistance	53	52	61	51	28	57	25
10	Bureau of Rec. O & M [4/]	0	0	0	0	0	0	0
11	Corps of Eng. O & M [4/]	1	0	0	0	0	0	0
12	L. Snake River Comp. Plan O & M [4/]	0	0	0	0	0	0	0
13	**Total Assoc. Project Costs**	**54**	**52**	**61**	**51**	**28**	**57**	**25**
C.	**CAPITAL TRANSFERS**							
	Amortization							
14	Bonneville Bonds [6/]	246	111	53	87	14	536	499
15	Bureau of Reclamation Appropriations					44		
16	Corps of Engineers Appropriations	321		99	98	118	11	0
17	Lower Snake River Comp. Plan	0	0	0	0	0	0	0
18	Bonneville Appropriations	0	98	55	36	88	12	3
19	**Total Capital Transfers**	**567**	**209**	**207**	**221**	**264**	**559**	**503**
D.	**OTHER PAYMENTS**							
20	Unfunded CSRS Liability [5/]	37	38	38	39	40	40	41
21	**TOTAL TREASURY PAYMENTS**	**991**	**713**	**710**	**741**	**803**	**1,144**	**1,087**

These notes are an integral part of this table.

1/ This interest cost is capitalized and included in BPA's Transmission System Development, System Replacments, and Associated Projects Capital programs. AFUDC is

2/ Includes interest on construction funding for Corp of Engineers (Corps) fish bypass facilities at Corps dams in the Columbia River Basin, including Lower

3/ Includes payments paid by Reclamation to the U.S. Treasury on behalf of Bonneville.

4/ Costs for power O&M is funded directly by Bonneville as follows (in millions):

FISCAL YEAR	2014	2015	2016	2017	2018	2019	2020
Bureau of Reclamation	138	143	157	158	161	163	165
Corps of Engineers	223	232	244	251	255	259	274
Subtotal Bureau and Corps	361	375	401	409	416	422	440
Lower Snake River Comp. Plan	31	32	32	33	34	34	35
Total	392	407	433	442	449	456	475

5/ See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

6/ In this FY 2016 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold to the U.S. Treasury.

Does not include Treasury bond premiums on refinanced Treasury bonds.

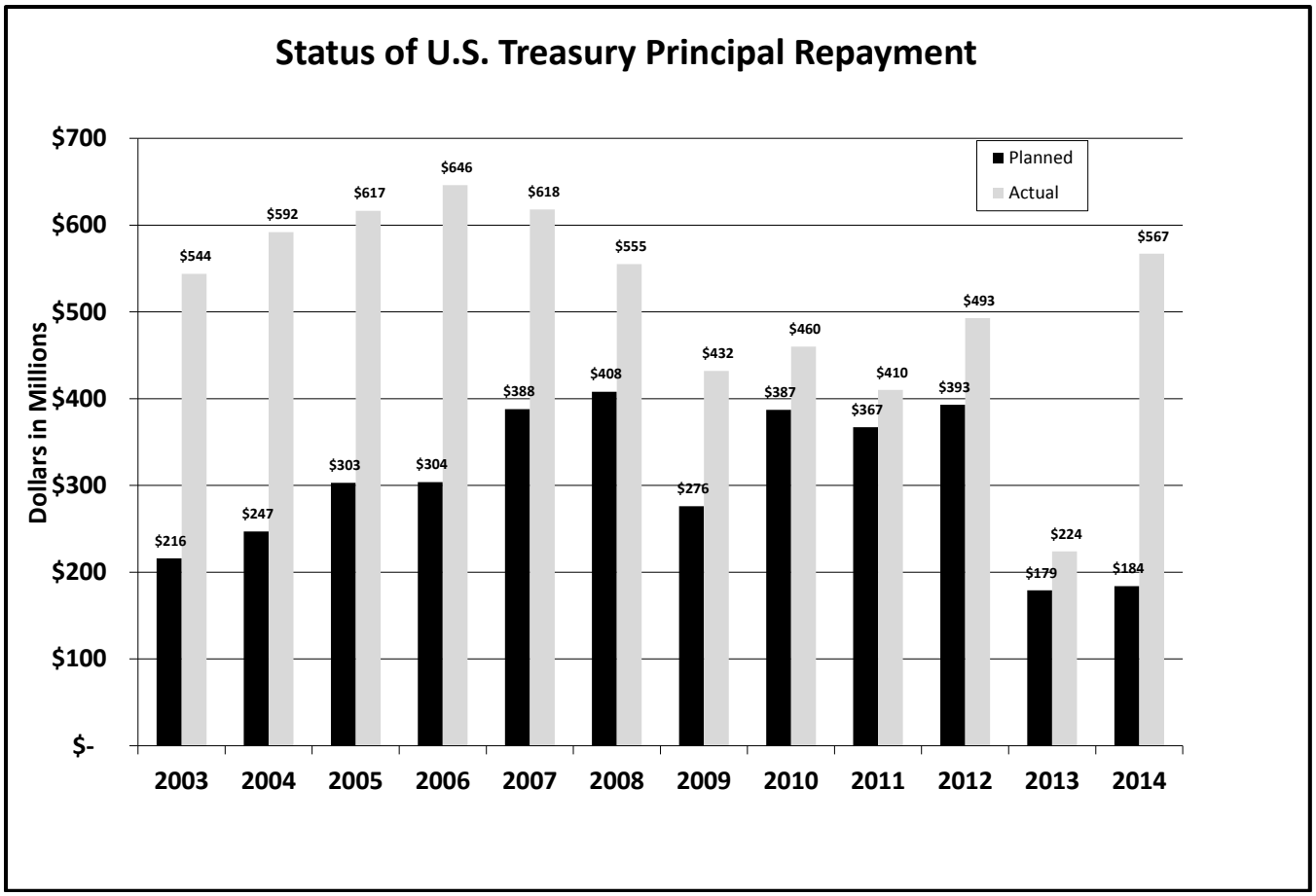


Chart Notes

[1/] This chart displays principal repayment only.

[2/] U.S. Treasury payment outyear estimates for planned amortization of principal are based on rate case estimates when available and planned amortization for future rate case periods. These estimates may change due to revised capital investment plans, actual U.S. Treasury borrowing, and advanced amortization payments. Bonneville made its full scheduled FY 2014 payment responsibility to the U.S. Treasury. Bonneville's aggregate U.S. Treasury payment was $991 million, comprised of $567 million in amortization, including advanced repayment of $321 million, $333 million in interest, and $91 million for other costs.

[3/] FYs 2002-2012 payments include portions of future planned amortization amounts consistent with Bonneville's capital strategy plan and the Bonneville /Energy Northwest debt optimization program.

[4/] Advance amortization due to sale of transmission facilities includes $ 12.7 million in FY 2003, $5.3 million in FY 2006, $2 million in FY 2011, $0.4 million in FY 2013 and $0.4 million in FY 2014.

[5/] The cumulative amount of actual advance amortization payments as of the end of FY 2014 are $3,060 million.

OBJECT CLASSIFICATION STATEMENT

(in millions of dollars)

		ESTIMATES		
		2014 act.	**2015**	**2016**
11.1	Full-time permanent	347	368	376
11.3	Other than full-time permanent	-	-	-
11.5	Other personnel compensation	30	32	33
11.9	**Total personnel compensation**	**378**	**401**	**409**
12.1	Civilian personnel benefits	113	120	123
13.0	Benefits for former personnel	-	-	-
21.0	Travel and transportation of persons	18	19	19
22.0	Transportation of things	2	3	3
23.1	Rental payments to GSA	10	10	11
23.2	Rents, other	31	33	34
23.3	Communication, utilities & misc. charges	9	10	10
25.1	Consulting Services	197	209	214
25.2	Other Services	2,635	2,385	2,437
25.5	R & D Contracts	17	16	16
26.0	Supplies and materials	56	60	61
31.0	Equipment	150	160	163
32.0	Lands and structures	297	315	322
41.0	Grants, subsidies, contributions	43	45	46
43.0	Interest and dividends	235	249	255
99.0	**Total obligations**	**4,192**	**4,036**	**4,122**

Estimate of Receipts
(in millions of dollars)

	Fiscal Year						
	2014	2015	2016	2017	2018	2019	2020
Reclamation Interest	44	44	44	44	44	40	40
Reclamation Amortization	0	0	0	0	44	0	0
Reclamation O&M		0	0	0	0	0	0
Reclamation Irrig. Assist.	53	52	61	51	28	57	25
Revenues Collected by Reclamation	-12	-7	-7	-7	-7	-7	-7
Distributed in Treasury Account (credit)							
Colville Settlement (credit)	-5	-5	-5	-5	-5	-5	-5
Total 1/ Reclamation Fund	**79**	**84**	**93**	**83**	**103**	**86**	**53**
Corps O&M							
CSRS	37	38	38	39	40	40	41
Total 2/ Repayments on misc.costs	**37**	**38**	**38**	**39**	**40**	**40**	**41**

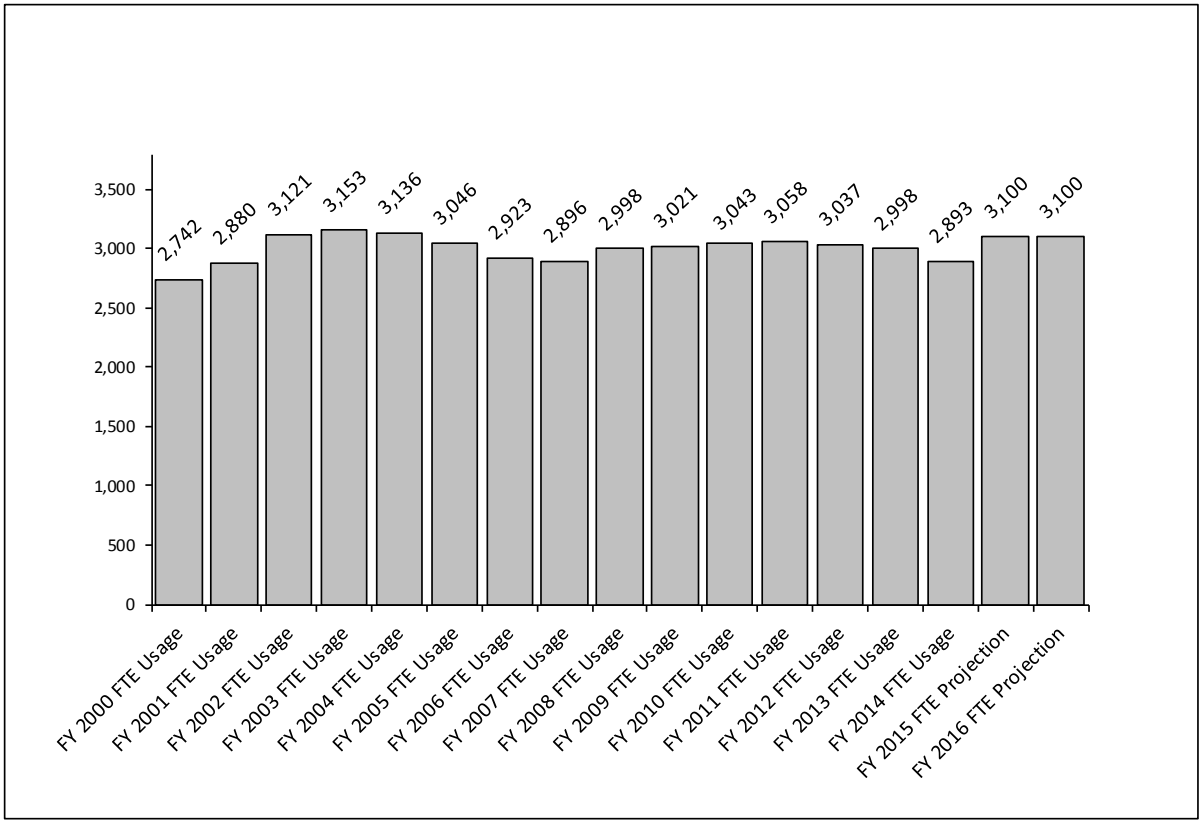
1/ Includes amortization of appropriations and irrigation assistance, and interest costs for Reclamation. The cost of power O&M for Reclamation is no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfer to Account #895000.26

2/ The costs of power O&M for the Corps and Lower Snake Comp. Plan are no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfers to Account #892889, Repayments on misc. recoverable costs, not otherwise classified. Costs for power O&M is funded directly by Bonneville as follows (in millions)

	2014	2015	2016	2017	2018	2019	2020
Bureau of Reclamation	138	143	157	158	161	163	165
Corps of Engineers	223	232	244	251	255	259	274
Lower Snake River Comp. Plan	31	32	32	33	34	34	35
Total	**392**	**407**	**433**	**442**	**449**	**456**	**475**

See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

BONNEVILLE FTE



Actual FTE data is consistent with DOE personnel reports.

FTE outyear data are estimates and may change.

Total Cost of BPA Fish & Wildlife Actions

COST ELEMENT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
CAPITAL INVESTMENTS [1/]										
BPA FISH AND WILDLIFE	12.2	35.4	35.2	25.5	27.4	40.0	90.2	57.5	52.1	37.4
BPA SOFTWARE DEVELOPMENT COSTS	-	0.9	1.0	1.3	0.6	1.2	0.8	0.4	0.0	0.1
ASSOCIATED PROJECTS (FEDERAL HYDRO)	53.8	360.0	60.4	37.3	135.7	56.4	103.0	114.5	103.6	101.7
TOTAL CAPITAL INVESTMENTS	**66.0**	**396.3**	**96.6**	**64.2**	**163.7**	**97.6**	**193.9**	**172.3**	**155.7**	**139.2**
PROGRAM EXPENSES										
BPA DIRECT FISH AND WILDLIFE PROGRAM	135.8	137.9	139.5	148.9	177.9	199.6	221.1	248.9	239.0	231.8
FISH & WILDLIFE SOFTWARE EXPENSE COSTS									0.2	0.3
SUPPLEMENTAL MITIGATION PROGRAM EXPENSES [2/]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REIMBURSABLE/DIRECT-FUNDED PROJECTS [3/]										
O & M LOWER SNAKE RIVER HATCHERIES	17.2	20.1	19.3	19.4	20.8	23.3	24.5	22.0	28.7	31.0
O & M CORPS OF ENGINEERS	32.5	31.8	32.9	34.4	34.3	36.5	40.3	41.1	39.2	47.8
O & M BUREAU OF RECLAMATION	3.9	4.5	3.9	4.3	4.5	5.2	5.0	5.3	5.6	6.6
NW POWER AND CONSERVATION COUNCIL ALLOCATED @ 50%	4.3	4.3	4.2	4.1	4.7	4.7	4.5	4.6	5.0	4.9
SUBTOTAL (REIMB/DIRECT-FUNDED)	57.9	60.7	60.3	62.2	64.3	69.7	74.3	73.0	78.5	90.3
TOTAL OPERATING EXPENSES	**193.7**	**198.6**	**199.7**	**211.1**	**242.1**	**269.3**	**295.3**	**321.9**	**317.7**	**322.40**
PROGRAM RELATED FIXED EXPENSES [4/]										
INTEREST EXPENSE	56.4	53.4	76.0	76.9	78.7	80.5	79.2	80.6	89.1	83.4
AMORTIZATION EXPENSE	17.4	17.4	22.9	24.4	24.6	25.0	28.3	30.2	35.7	38.7
DEPRECIATION EXPENSE	15.9	16.7	14.0	14.9	16.7	18.0	19.6	20.7	18.6	19.2
TOTAL FIXED EXPENSES	**89.7**	**87.5**	**112.9**	**116.2**	**120.0**	**123.5**	**127.2**	**131.5**	**143.4**	**141.3**
GRAND TOTAL PROGRAM EXPENSES	**283.4**	**286.1**	**312.7**	**327.3**	**362.1**	**392.8**	**422.5**	**453.4**	**461.1**	**463.7**
FORGONE REVENUES AND POWER PURCHASES										
FOREGONE REVENUES	182.1	397.4	282.6	273.5	142.8	99.4	156.7	152.2	135.5	122.7
BPA POWER PURCH. FOR FISH ENHANCEMENT	110.8	168.2	120.7	274.9	240.3	310.1	70.7	38.5	85.8	196.2
TOTAL FOREGONE REVENUES AND POWER PURCHASES	**292.9**	**565.6**	**403.3**	**548.5**	**383.1**	**409.5**	**227.4**	**190.7**	**221.3**	**318.9**
TOTAL PROGRAM EXPENSES, FOREGONE REVENUES, & POWER PURCHASES	**576.3**	**851.7**	**716.0**	**875.8**	**745.3**	**802.3**	**649.9**	**644.1**	**682.4**	**782.6**
CREDITS										
4(h)(10)(C)	(57.7)	(76.4)	(66.1)	(100.5)	(99.5)	(122.8)	(85.3)	(77.0)	(84.1)	(103.9)
TOTAL CREDITS	**(57.7)**	**(76.4)**	**(66.1)**	**(100.5)**	**(99.5)**	**(122.8)**	**(85.3)**	**(77.0)**	**(84.1)**	**(103.9)**

1/ Capital Investments include both BPA's direct Fish and Wildlife Program capital investments, funded by BPA's Treasury borrowing, and "Associated Projects", which include capital investments at Corps of Engineers' and Bureau of Reclamation projects, funded by appropriations and repaid by BPA. The negative amount in FY 1997 reflects a decision to reverse "plant-in-service" investment that was never actually placed into service. The annual expenses associated with these investments are included in "Program-Related Fixed Expenses", below.

2/ Includes High Priority and Action Plan Expenses and other supplemental programs.

3/ "Reimbursable/Direct-Funded Projects" includes the portion of costs BPA pays to or on behalf of other entities that is determined to be for fish and wildlife purposes.

4/ "Fixed Expenses" include depreciation, amortization and interest on investments on the Corps of Engineers' projects, and amortization and interest on the investments associated with BPA's direct Fish and Wildlife Program.